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ECONOMIC BULLETIN FOR EUROPE

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SYMBOLS EMPLOYED

The following symbols have been used throughout this BULLETIN :

.. = not available or not pertinent.
— = nil or negligible.
• = estimate by the Secretariat of the Economic Commission for Europe.
• = revised figure.

In referring to combinations of years, the use of an oblique stroke—*e.g.*, 1954/55—signifies a 12-month period (say from 1 July 1954 to 30 June 1955). The use of a hyphen—*e.g.*, 1953–1955—signifies an average of the full period of calendar years covered (including the end years indicated).

Unless otherwise indicated, the standard unit of weight used throughout is the metric ton. The definition of " billion " used throughout is one thousand millions. Minor discrepancies in totals and percentages are due to rounding.

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ECONOMIC BULLETIN FOR EUROPE

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UNITED NATIONS

CURRENT ECONOMIC DEVELOPMENTS IN EUROPE

1. Recent Trends of Output and Demand in Western Europe

The Growth of Industrial Production

The rapid economic expansion in western Europe continued up to the end of 1955; but the estimates so far available suggest that the over-all level of industrial production in the first quarter of 1956 may have been little, if at all, higher than that of the fourth quarter of last year.[1] However, it would certainly be premature to conclude that the early months of this year have marked the end of the expansion.

The rate of increase of industrial output in western Europe as a whole had begun to slow down slightly in the second half of last year, and this tendency has undoubtedly continued into the early months of 1956, largely as a result of the marked levelling off of the growth of production in the United Kingdom. But the apparent abrupt cessation of the rise of total western European industrial output in the first quarter is to some extent merely a reflection of the unusually bad weather in February and March.

The exceptionally severe weather in these months has caused some set-backs not only in those branches of activity most directly affected, such as agriculture, building and transport, but also in other industries which have suffered from transport difficulties or from unusually high rates of sickness among their workers. In spite of a more than normal growth of demand for fuel for heating, widespread transport difficulties and some losses of production of coal and hydro-power, fuel and power supplies for industry have in general been adequate during the first quarter of the year, thanks to the building up of consumers' and distributors' stocks of coal during 1955. Nevertheless, the severe weather has undoubtedly resulted in some reduction of total industrial output in the first quarter of this year below the levels that would otherwise have been reached.

The pattern of growth of industrial production up to the early months of this year has shown little change from the tendencies already becoming apparent during 1955. The expansion became increasingly concentrated during last year on the metals and metal-using industries; and Table 1 reveals the extent to which the share of these industries in the rise in total output has increased as the growth of production in the chemicals sector slowed down and the textiles slump continued.

There have recently been signs of some revival in the textiles and clothing industries in a number of countries, though this may be due to little more than the ending of a period of de-stocking resulting not only from the stagnation of final demand, but also from uncertainty about the future of the United States policies towards exports of cotton. The signs of revival in the textiles sector have been most apparent in western Germany, France and Sweden, and to a lesser extent in Belgium. Conditions in the United Kingdom textiles industry also were said to have improved somewhat at the turn of the year, though later reports were more gloomy.

[1] This comparison is based on indices of industrial production adjusted to exclude normal seasonal variations.

TABLE 1

Industrial output in western Europe

Index numbers: seasonally adjusted

	1953 = 100							Percentage share in the increase in total output over 1953	
	1954	1955				1956		1954	1955
		I	II	III	IV	Jan.	Feb.		
Total industrial production	109	116	119	121	123	123	121 [a]	100	100
Mining	102	104	104	105	107			2	2
Food, beverages and tobacco	103	105	107	109	109			4	5
Textiles	105	104	101	102	103	106	..	5	1
Chemicals	114	120	125	127	126			17	15
Basic metals	112	127	129	132	133			9	12
Metal-using	111	123	126	127	131	..	..	36	41
Total sectors listed above	109	116	118	120	122			73	76

Sources: OEEC Statistical Bulletins; secretariat estimates for 1956.

[a] Provisional figure for March is 123.

Within the metal-using industries there has been in some countries, and especially in the United Kingdom, a noticeable slackening in the growth of output of consumers' durable goods, including motor cars. Less favourable conditions in overseas markets and more restrictive government policies in a number of European countries, affecting hire purchase contracts and the general availability of credit to consumers, have contributed largely to this result; and some piling up of stocks in the hands of retailers and manufacturers in the later months of 1955 may have reinforced the depressing effects on output of these goods.

As was pointed out in the SURVEY for 1955, demand within western Europe itself—and especially investment demand—has, during the last two years, supplied the main motive force behind the expansion. From the beginning of 1954 until the middle of 1955 the growth of exports to destinations outside western Europe barely kept pace with the rate of increase of industrial production, while trade among western European countries grew considerably faster. But during the last half of 1955, while the growth of trade with overseas countries continued, intra-European trade rose more slowly (see Chart 1).[2] Part of the explanation of this levelling off of the rise in intra-

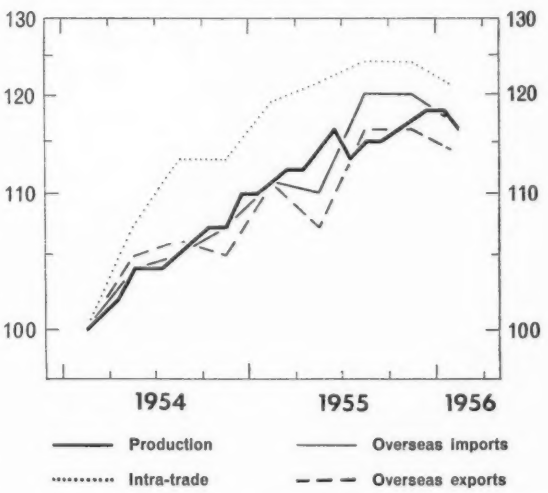
[2] The declines in production and in both intra-European and overseas trade in the first quarter of 1956 are attributable, at least in part, to the effects of unusually severe weather.

CHART 1

Industrial production[a] and foreign trade[b] of western Europe

Volume indices, adjusted for seasonal variations, first quarter 1954 = 100

Semi-logarithmic scale



NOTE. — Trade data for the United Kingdom are not adjusted for effects of dock and rail strikes in the fourth quarter of 1954 and second quarter of 1955.

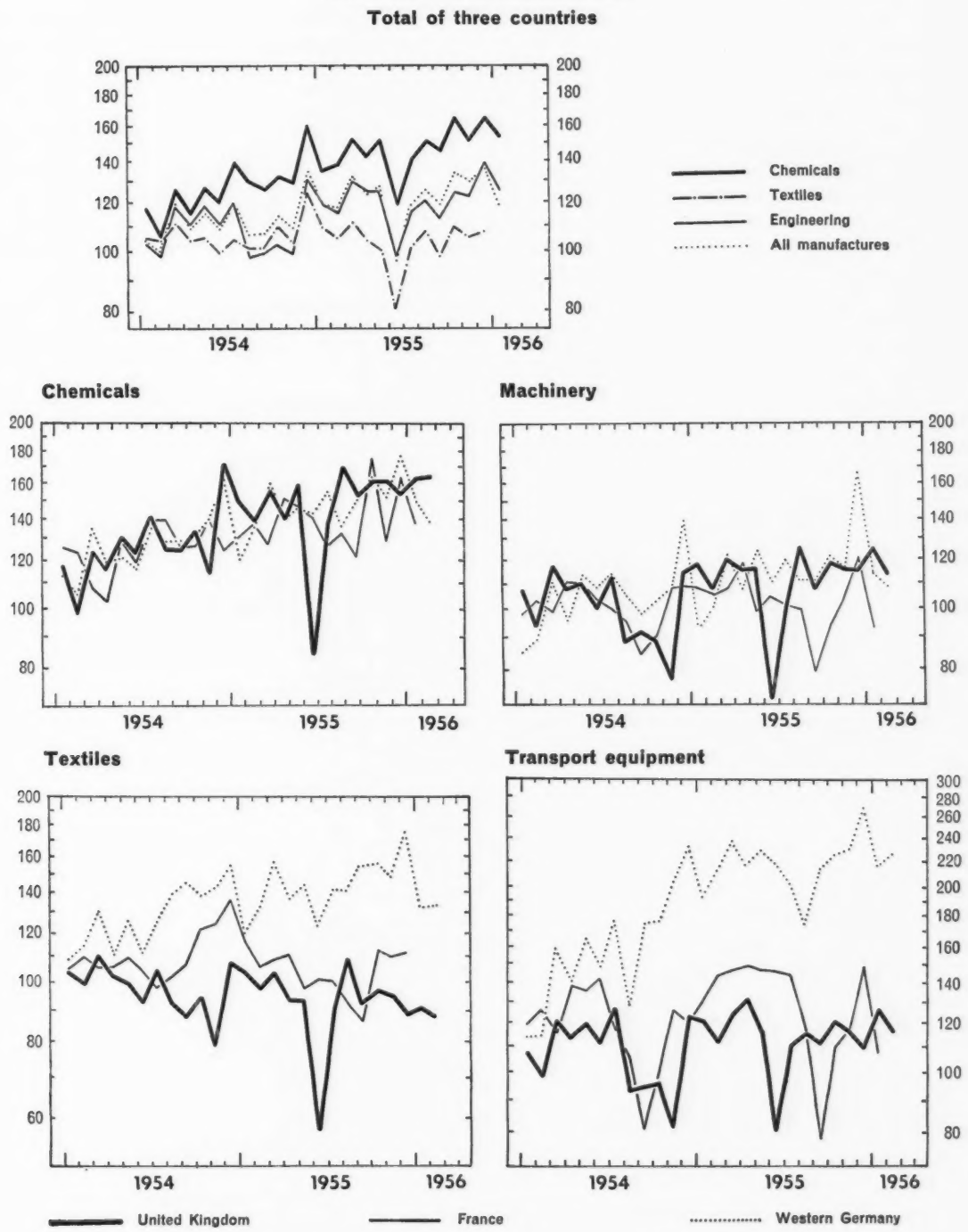
[a] Includes the following countries: Austria, Belgium, Denmark, Finland, France, western Germany, Italy, the Netherlands, Norway, Sweden and the United Kingdom.

[b] Figures relate to trade of OEEC member countries.

CHART 2

Volume of exports of manufactures from three western European countries 1954-1956

1953=100 — Semi-logarithmic scale



Sources : National statistics. Official volume indices for France and the United Kingdom are given only by quarters. Monthly indices were obtained by dividing the monthly current value indices by the official quarterly unit value indices.

NOTE. — Data for the United Kingdom are not adjusted for effects of dock and rail strikes in the fourth quarter of 1954 and second quarter of 1955.

European trade is the reduction in western German exports of coal and the slower increase in French, Belgian and western German exports of iron and steel towards the end of last year.

Chart 2 throws some further light on the character of the growth of western European exports in the recent past. The total volume of exports of manufactured goods to all destinations by France, western Germany and the United Kingdom [3] rose less rapidly during 1955 than in the previous year. Within the total, exports of textiles have remained practically unchanged during the last year, apart from seasonal variations and the unusually sharp fall in the middle of 1955 attributable to the effects of the rail and dock strikes in the United Kingdom. The expansion has depended mainly on exports of chemicals [4] and engineering products, though chemicals did not show so rapid a growth last year, in relation to other exports, as in 1954. The western German share of the total has continued to increase, and the apparently greater competitiveness of western German exports of textiles and transport equipment is particularly noticeable.

[3] These three countries account for about two-thirds of total western European exports of manufactured goods.

[4] Including some products not included in the category of "total manufactures".

It is not only in the sphere of export trade that the general trends of economic development in western Europe as a whole during recent months have concealed fairly wide divergencies between countries. Since the middle of 1955 the stagnation of over-all industrial production in the United Kingdom and Denmark has been in marked contrast with the continuing expansion elsewhere. In Denmark the slackness is fairly general; but in the United Kingdom the levelling off of total output is almost entirely attributable to slack demand in the consumer-goods industries, and boom conditions exist in the capital-goods sectors.

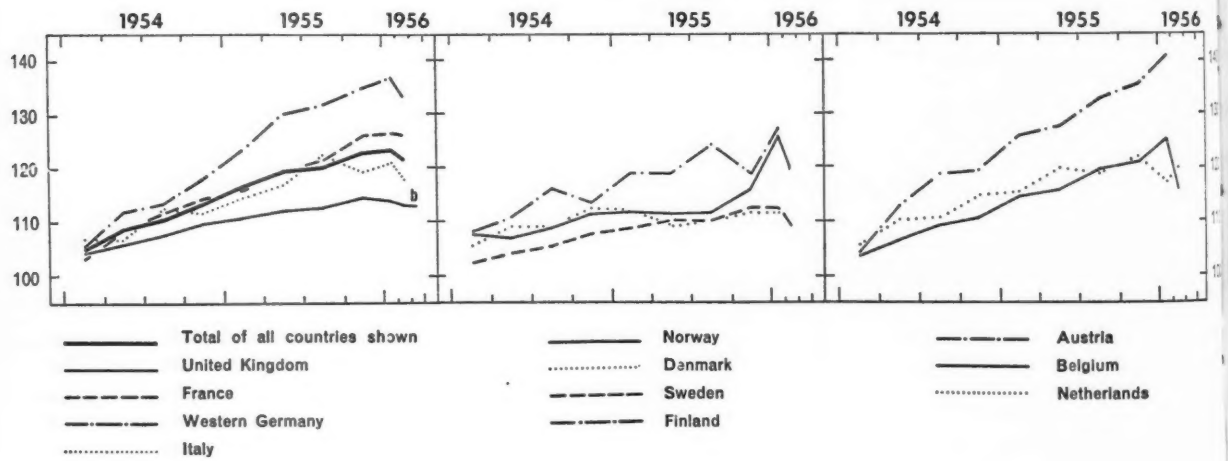
In western Germany the rate of growth of industrial output has fallen slightly since the middle of last year, but it is still greater than in most other countries. In France, Austria and Norway also the rate of increase was particularly rapid during the later months of 1955 and until the set-back in February of this year (see Chart 3). In Norway the remarkable upswing in recent months has been due in part to the bringing into operation during 1955 of new plant in the basic metals industries which has provided for a considerable increase in exports. In western Germany, France and Austria, the rate of growth of output is still highest in the capital-goods sector, but in western

CHART 3

Total industrial production [a] in western European countries

Index numbers, adjusted for seasonal variations, 1953=100

Semi-logarithmic scale

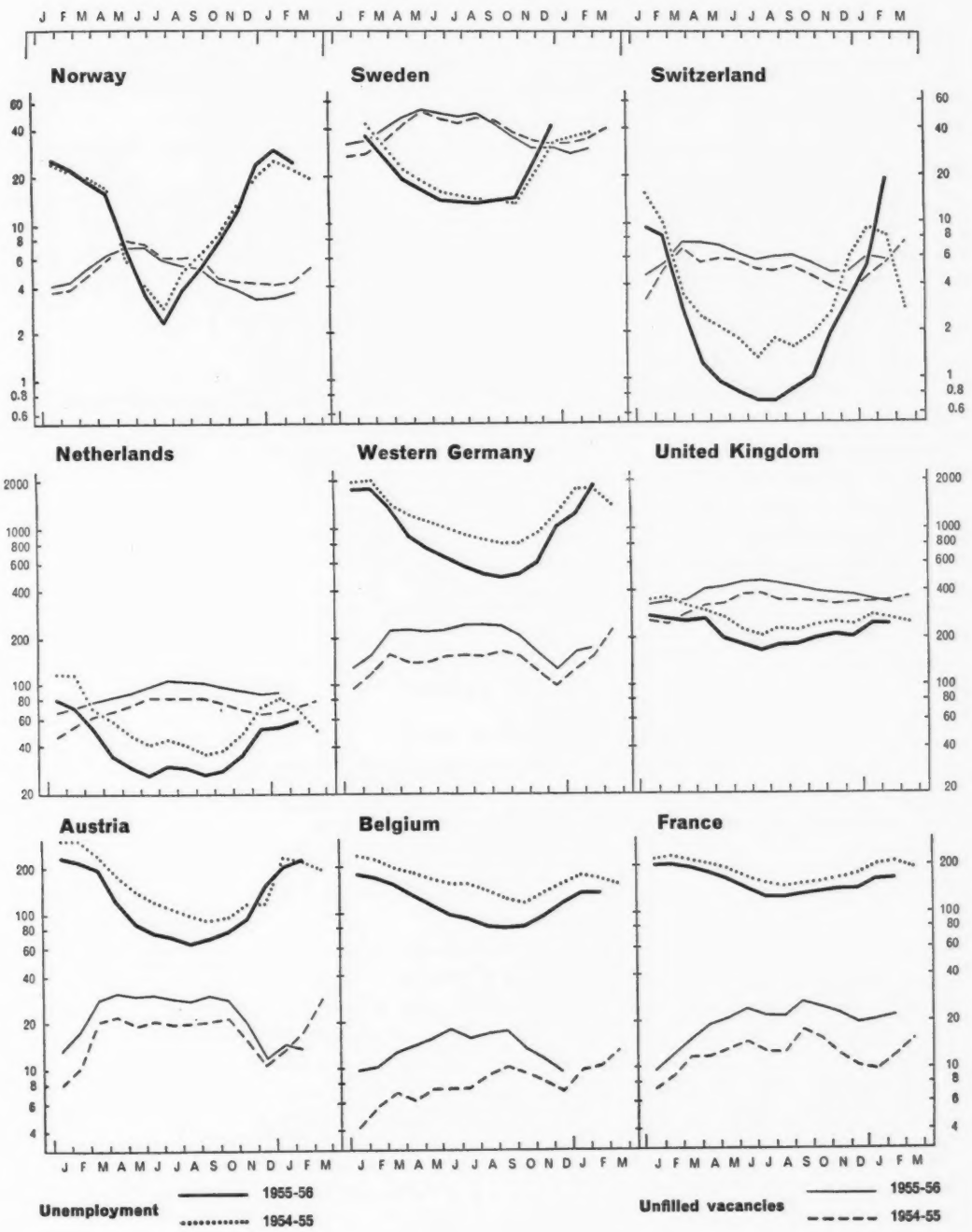


[a] Excluding building.
[b] Including building.

CHART 4

Total unemployment and unfilled vacancies in selected European countries

Thousands — Semi-logarithmic scale



Sources : National statistics.

NOTE. — The figures constitute a reliable indication of trends in each country, but do not permit a comparison between countries of absolute levels of unemployment or unfilled vacancies.

Germany consumer-goods production in general has been rising faster since the middle of 1955 than in the first half of last year.

In most other countries total industrial production has continued to expand, though less rapidly than in the four countries just mentioned, until February of this year. But in Finland, as in Denmark, the recent strikes have probably depressed the index for the first quarter.

There are few exceptions to the general rule that investment and exports have recently been supplying the major part of the impetus to expansion. In Belgium the influence of growing export demand seems to have been predominant in the later months of 1955 and early 1956. In Sweden the boom in the export industries was the main force behind the expansion during 1955, although at the end of the year there were signs of a moderate revival in some of the consumer-goods industries producing mainly for the home market.

Labour Market Conditions

The continuing strength of the over-all expansion is reflected in the extremely tight conditions in the labour market in most countries. Throughout 1955 employment was consistently above the previous year's levels in every country except Denmark, where a deliberate policy of contracting home demand, as a means of correcting the serious balance-of-payments position, has been in force since the middle of 1954. There has also been a persistent tendency (except in Denmark) for unemployment to be below the previous year's levels and for the number of unfilled vacancies to be higher than in the previous year (see Chart 4). But in several countries there have been indications of some easing of the pressure of demand for labour in the recent past. In Norway and Sweden, where the first measures to restrain the expansion were taken in the winter of 1954/55, the number of unfilled vacancies began to decline about the middle of last year; and more recently similar signs of an easing of the labour market have appeared in Austria, Finland and the United Kingdom. There is so far little reason to suppose, however, that these tendencies reflect anything more than minor changes in a generally tight manpower situation.[5]

In most countries demand for labour is particularly strong in the metal-using industries, but the contrast between the situation in different sectors is especially pronounced in the United Kingdom. There, in March, overtime working and labour shortage in most sectors producing capital goods contrasted with short-time working in a wide variety of consumer-goods industries ranging from textiles and pottery to furniture, radios and television, and motor cars. The small increase in industrial productivity registered in the United Kingdom in 1955[6] must have been due in part to losses caused by the rail and dock strikes in the middle of the year: but it was probably also partly due to the fact that, towards the end of the year, employers in a number of sectors were retaining labour for which full-time employment was not possible, in the hope that conditions might later improve, and in the fear that workers once dismissed would not easily be replaced when they were again needed.

[5] Unemployment figures for February and March cannot be regarded as significant in view of the weather conditions in those months.

[6] Output per man in industry was only 2 per cent greater in 1955 than in 1954.

2. The Capacity for Further Expansion

Manpower

It is clear that in a number of sectors of production the spare capacity existing at the beginning of last year has by now become very fully employed in most countries ; and in the industries producing basic metals and machinery and other forms of capital equipment reports of lengthening order books and shortages of skilled labour are widespread. In several countries—the United Kingdom, the Netherlands, Finland, Norway, Sweden and Switzerland—the general shortage of labour is acute, in spite of the signs of a slight easing of the situation which have already been noted in some of these countries. In France the calling up of greater numbers of men for service in Algeria threatens to produce a serious shortage of labour, and especially of skilled workers.

This does not, of course, mean that the physical capacity for further expansion is exhausted, or even that it is impossible that output should continue to grow at something approaching the rate experienced recently. New capacity will be coming into operation in 1956 in all countries as a result of investment undertaken during last year and earlier ; possibilities of increasing the productivity of the present labour force still exist, and local scarcities of manpower can be eased to some extent by immigration of workers from other countries such as Italy. Moreover, if slack demand in some sectors of production should

persist, the process of transfer of workers to the industries where pressure is strongest—which has been generally apparent during 1955—should continue. Nevertheless, it is true that the main reserves of capacity now exist in the consumer-goods sectors, and the continued growth of demand in the same pattern as during the recent past is likely to result in a further slowing-down of the pace of over-all expansion.

Fuel and Power

It seems unlikely that further expansion will be seriously hampered by shortages of fuel or basic materials, though it may well require increased imports, particularly of coal and petroleum and of steel.

Coal consumption in the first quarter of the year was increased above normal levels by the unusually cold weather, and coal output in several of the main producing countries was somewhat reduced. Serious interruptions of industrial activity were avoided—in spite of the added complication of difficulties with coal transport and lower supplies of hydro-power—by running down consumers' stocks of coal. These had in many countries reached very low levels by the end of March and now have to be re-built, though in the United Kingdom stocks at the end of March remained above the previous year's level (see Table 2).

The continuing unsatisfactory trend of coal production, especially in the United Kingdom, and the prospect of a further rise in consumption this year, in spite of growing reliance on oil and hydro-power,

TABLE 2

Stocks of coal in western Europe

	Million tons	Percentage changes since corresponding period of previous year			
	End of September 1955	End of September 1954	End of September 1955	End of March 1955	End of March 1956
Hard coal					
Pithead stocks					
ECSC countries	9.4	+39	−36	−4	−35
United Kingdom	2.1	−48	+61	−20	+40
Total distributed stocks					
United Kingdom	18.1	−9	+10	−20	+28
Western Germany	5.7	—	+24	−12	+50
France	4.1	+5	−21	+33	..
Belgium [a]	0.8	+6	−5	−6	−8
Netherlands	1.3	+10	+5	+20	..
Norway	0.4	−26	−15	−25	−16
Denmark	1.8	+10	+32	+3	+57
Austria	0.4	−37	+34	+43	−34
of which industrial stocks					
United Kingdom	4.3	−15	+4	−24	+23
Western Germany	3.0	−4	+36	+2	+56
France [b]	1.5	—	−30	−7	..
Netherlands	0.5	+1	−5	−4	..
Norway	0.1	−43	−20	−33	—
Austria	0.1	−33	+53	+3	+18
Brown coal					
Pithead stocks					
Western Germany	0.1	+17	+62	+28	..

Sources: Quarterly Bulletin of Coal Statistics for Europe and *Monthly Coal Statistical Summaries*, Economic Commission for Europe.

[a] Excluding industrial stocks.

[b] Including stocks of all solid fuels.

are expected to raise western Europe's coal imports from the United States in 1956 to some 35 to 40 million tons, as compared with 25 million tons last year.

Output of Coal in Western Europe

	ECSC countries	United Kingdom	Total western Europe
Production in million tons (hard coal equivalent)			
1954	267	229	496
1955	272	225	497
Percentage increase in output over same period of previous year			
1954	2	—	1
1955 I	1	1	1
II	5	−3	1
III	—	−2	−1
IV	2	—	1
1956 I	2	−3	—

Sources: Quarterly Bulletin of Coal Statistics for Europe and *Monthly Coal Statistical Summaries*, Economic Commission for Europe.

Prospects for supplies of electric power seem generally fairly satisfactory. In France, where fears of electricity shortages in the winter months have been a constant feature of the post-war economy, no serious difficulties occurred this winter, and it is now thought that the equipment already installed or in course of erection has removed all fear of shortages for the next three winters.[7] In the United Kingdom, during 1955, capacity was not always equal to the maximum potential demand; but no serious difficulties resulted, and new capacity installed during the year more than kept pace with rising consumption. In Italy and in Switzerland shortages of electricity have caused occasional difficulties this winter, but it does not seem that lack of generating capacity will be a significant bottleneck in the immediate future.

Steel

There are no clear signs that the intense demand for steel in western Europe is diminishing, and complaints of shortages of particular types of steel are widespread. Orders continue to exceed deliveries in western Germany and the United Kingdom, and delays of five to six months between the placing of an order and its execution are reported to be quite normal in both countries.

In France also orders for many types of steel are running at very high levels and export demand remains strong. An indication of the atmosphere of scarcity of steel in France is the fact that the Association of French Steel Users recently asked the High Authority of the European Coal and Steel Community to declare a shortage of steel. Such a declaration would allow steel produced within the Community to be allocated among its members with limitations on exports to other countries.

The expansion in crude steel production has been maintained in recent months in all major producing countries, although the rate of increase is generally much inferior to that recorded a year ago, as can be seen from the figures in Table 3. To some extent the fall in the rate of growth of output in the first quarter of this year is due to special factors. The severe weather conditions, affecting the movement of fuel and raw materials for the steel industries, slowed down output in a number of mills on the Continent, and electric power shortages have been of some importance in holding up production in Italy. However, the fact that steel producing capacity in most countries is now fully utilized is a more important reason for the slower rise in output.

In spite of the slower rate of increase of steel production in recent months, reports from the United Kingdom and western Germany suggest no immediate worsening of the supply situation in these countries.

In western Germany the consumption of rolled steel products in the first half of 1956 is expected to rise to 15 per cent above the level in the first half of 1955. Requirements will increase particularly in the investment-goods industries (by 18 to 20 per cent), while a much smaller increase is expected in the needs of other consumers. It is expected that these requirements will be met without a further increase in net imports.[8]

The United Kingdom steel industry aims at increasing supplies of steel to the home market in 1956 by some 11 per cent over last year's level, assuming that imports by the steel industry [9] and total steel exports will be of the same order as last year and that there will be no further increase in producers' stocks. This is a considerable improvement on last year, when the corresponding increase was only 4 per cent, although steel consumption (excluding all stock building) rose by about 7 per cent.[10]

The results of an attempt to estimate the probable growth of steel production in 1956 in western Europe

[7] *Etudes et Conjoncture*, January-February 1956, p. 9.

[8] *Wirtschaftskonjunktur*, Heft 1, 1956.

[9] Excluding direct imports by consumers which were nearly 1 million tons greater in 1955 than in 1954.

[10] Source : *Note on Steel Production and Supplies*, 12 April 1956, the Iron and Steel Board.

TABLE 3

Crude steel production

	Million tons	Percentage increase over corresponding period of previous year						
	1955	1955					1956	Planned output in 1956 *
		Year	Quarters I	II	III	IV	I	
Belgium-Luxembourg	9.1	16	24	18	12	12	8	6
France	12.6	18	27	26	11	12	4	7
Saar	3.2	13	16	24	8	6	13	7
Western Germany	21.3	22	33	29	17	14	11	10
Italy	5.4	28	29	35	31	19	8	5
Netherlands	1.0	5	3	6	6	5	8	2
Total ECSC	52.6	20	27	26	15	13	9	8
United Kingdom	20.1	7	8	4	8	8	7	8
Other western Europe	7.0	15	22	13	10	16 [a]	7 *	7
Total western Europe	79.7	16	21	18	13	12 [a]	8 *	8

Sources: *Quarterly Bulletin of Steel Statistics for Europe*, ECE; "The European Steel Market in 1955" (document to be issued shortly), ECE.
[a] Provisional.

as a whole are shown in Table 3.[11] Except in the United Kingdom, where the increase in output last year was modest as compared with that in the other main producing countries, production in the current year seems unlikely to expand at anything approaching the 1955 rate. Less new capacity will be brought into operation this year, and available reserves of spare capacity were, on the whole, exhausted during 1955.[12]

It is difficult to judge the extent to which the building up of stocks of steel contributed to the astonishing growth of demand in western Europe last year. In the United Kingdom stocks held by merchants and consumers rose by about 300,000 tons and total stocks by some 700,000 tons—equivalent to about 4 per cent of total steel consumption by British industry in that year. Unfortunately, there is very little information on stock changes in other countries;[13] but it seems highly probable that steel users on the Continent have been as anxious as their British counterparts to build up stocks in the face of growing demand for their products and lengthening delivery dates for steel supplies.

Any slackening of final demand for steel products would probably check stock-building demand to some extent and might even lead to some de-stocking. Without some relief of this kind, the present estimates of output of steel suggest that western Europe's need for imports will increase considerably this year.

[11] The estimate, which has been made by the secretariat on the basis of a detailed analysis of investment projects under execution is thought slightly to under-estimate the probable growth of steel output this year.

[12] Steel mills dating from the 1880's were brought into operation in western Germany last year.

[13] Stocks of finished steel products held by merchants and consumers in western Germany are reported to be adequate (*Wirtschaftskonjunktur*, Heft 1, 1956).

3. Factors affecting Future Demand for Western European Production

Since, in spite of reduced labour reserves and a tendency for the expansion of western European steel-producing capacity to lag behind the growth of demand, factors on the side of physical capacity seem to allow for a continuing expansion, the development of production in western Europe in the near future will depend chiefly on the state of demand. Here most of the key factors appear to point to a further rise, though at a slower pace than during last year.

In most countries continuing strong demand for industrial investment and the effects of recent wage increases are among the factors tending to produce a continuing upward trend. On the other side, some slackening of housing activity in a number of coun-

TABLE 4

Forecasts of economic developments in 1956 in certain countries

Percentage changes in volume over the previous year

	Netherlands		Norway		Sweden	
	Actual 1955	Forecast 1956	Actual 1955	Forecast 1956	Actual 1955	Forecast 1956
Gross national product	+6	+3	+3	+4	+3	+3
Imports of goods and services	+8	+9	+7	+3	+11	+2
Private consumption	+6	+4	+3	+3	+3	+3
Private gross fixed investment	+12	+7	+8[a]	−2	+3	+5
Public gross fixed investment	+6	+5	+1[a]	+6	+1	+3
Public consumption			−3	—	+3	+5
Exports of goods and services	+10	+6	+7	+6	+5	+2

Sources: National budgets and economic surveys.

[a] Changes in value. Public and private gross fixed investment taken together increased in volume by 5 per cent from 1954 to 1955.

tries, uncertainty about prospects for exports to the primary producing countries and the impact of more restrictive government policies will tend to reduce the rate of growth. But it is difficult to find evidence seriously suggesting the imminence of a general downturn unless government policies, which are further discussed below, should become generally and unduly restrictive.

However, there are marked differences in the situations of the three major industrialized countries which effectively set the pattern of over-all activity in western Europe.

The United Kingdom is the one major industrialized country in western Europe where the over-all index of industrial output has stagnated since the middle of 1955, although, as has already been mentioned, there is a marked contrast between the boom in the investment-goods industries and the slack demand for a wide range of consumer-goods. Nevertheless, the Government still sees the task for economic policy this year as that of restraining the growth of consumer demand sufficiently to permit both an increase in fixed investment, which is considered not only desirable but definitely to be expected, and an improvement in the balance of payments.[14] The success of this policy may require a considerable movement of manpower and other resources between industries, since the sectors affected by restraints on home demand will not always be able easily to find alternative markets abroad.

In France the physical possibilities of industrial expansion may be seriously affected by the increase in the armed forces for service in Algeria, and by the exodus of some North African workers from metropolitan France. Immigration of foreign workers might ease the general labour shortage to some extent, but, unless a highly selective system of call-up is introduced, shortages of skilled labour in some industries are likely to become acute. At the same time rising defence expenditure, the expansion and re-equipment plans of many industries, the effects of last year's wage increases, new extensions of paid holidays and increased social security benefits all threaten to add to an already strong pressure of demand.

In western Germany also, fears that the growth of demand may outrun that of production are constantly expressed. However, the labour force will continue to expand, though probably more slowly than during last year, and productive capacity will increase as earlier investment bears fruit. Demand is strong in all sectors, and rising defence expenditure, and prospective tax reliefs, increases in social security benefits and aid to agriculture will add to the pressure.

In so far as official estimates of economic trends in 1956 exist in other countries, they too predict a considerable expansion of output over last year's levels. For most of these countries, naturally, a forecast of continuing expansion is based essentially on the assumption of continuing high levels of activity in the outside world, and any change in external conditions would seriously affect their prospects.

In the Netherlands, Norway and Sweden quantitative forecasts of developments in 1956 have been made (see Table 4). In each of these countries, as in

[14] See *Economic Survey 1956*, Cmd. 9728, paragraphs 84 and 85.

those already mentioned, the possibilities of expansion this year are expected to be limited more by capacity than by demand, and the same is true of Austria and Finland. In the latter country, however, total industrial output in the whole year 1956 is expected to be little if at all greater than in 1955, as a result of losses caused by the recent strikes and the falling off of export demand for timber.

In Belgium recent forecasts of industrial production [15] in 1956 predict an increase over 1955 of 3 per cent, as compared with 7 per cent in the previous year. The estimate seems to have been based on the expectation that demand will be the main factor limiting the rise in output of consumer-goods and that available capacity will be the main limitation in other sectors. It has been assumed that exports will take about the same proportion of total output as in 1955. In Denmark also demand has not, for the last two years, been pressing on capacity, but some growth of both domestic investment and consumption over the 1955 level is expected this year.

[15] See *Planning de la production industrielle belge 1956.*

Short-term Indicators

The confidence of business men in the future of the expansion in a number of countries is demonstrated by the results of recent " business-test " inquiries which are summarized in Table 5. In western Germany the continuing strong flow of orders, especially export orders, to all sectors of industry in recent months supports the general confidence expressed in the answers to the IFO test,[16] though the proportion of

[16] A slightly less optimistic attitude towards prospects for the consumer-goods industries was apparent in the answers to the IFO test taken in March of this year.

TABLE 5

Results of recent " business-test " inquiries into business men's expectations

Figures in parentheses show the results of " business-test " inquiries a year before

Country and industry	Date of inquiry	Percentage of replies expecting business conditions [a] to be:			Percentage of replies reporting stocks of orders [b]:		
		Better	Unchanged	Worse	Higher	Unchanged	Lower
France	Nov. 1955						
All industry		61 (59)	33 (33)	6 (8)	65 (61)	25 (23)	10 (16)
Metal-using		71 (63)	26 (28)	3 (9)	80 (64)	14 (15)	6 (21)
Textiles		20 (45)	46 (43)	34 (12)	23 (52)	40 (23)	37 (25)
Italy	Jan. 1956						
All industry		54 (56)	33 (29)	11 (8)			
Capital-goods					50 (48)	35 (35)	12 (13)
Durable consumer-goods					57 (55)	28 (30)	13 (8)
Other consumer-goods					40 (50)	50 (38)	6 (5)
Sweden	Mar. 1956						
Engineering:							
Home market		7 (14)	73 (67)	20 (19)	24 (24)	67 (68)	9 (8)
Export market					15 (35)	78 (55)	7 (10)
Clothing		50 (23)	45 (64)	5 (13)	40 (28)	55 (53)	5 (19)
Western Germany	Feb. 1956				Relatively large	Sufficient	Too small
Investment-goods		23 (36)	72 (60)	5 (4)	30 (35)	63 (58)	7 (7)
Consumer-goods		18 (26)	78 (64)	4 (10)	27 (14)	59 (62)	14 (24)

Sources : France: *Etudes et Conjoncture*, March 1955 and March 1956 (inquiries by I.N.S.E.E.). Italy: *Mondo Economico*, Supplemento 28 January 1956. Germany: *I.F.O. Schnelldienst*, March 1956. Sweden: inquiries by the Konjunkturinstitutet.

[a] *Subject of the inquiry :*
France: Levels of production in the next six months as compared with the corresponding period of the previous year.
Italy : Conditions of general activity during the current half-year as compared with the previous half-year.
Sweden: In the clothing industry, March-May 1956 (1955) levels of production as compared with March-May 1955 (1954).
In the engineering industries, profits in the first half of 1956 (1955) as compared with the second half of 1955 (1954).
Germany: Business conditions in the coming six months as compared with the present conditions.

In France actual stocks of orders are compared with those a year before. The 1956 Swedish engineering inquiry related to April-June 1956 stocks of orders compared with April-June 1955, while the corresponding 1955 inquiry related to the first half of 1955 compared with the second half of 1954. In the Swedish clothing inquiry March-May stocks of orders are compared with those a year before. In Italy the subject of the inquiry is expected demand in the current half-year as compared with the previous half-year.

TABLE 6

Index numbers of orders received and of the stock of orders in industry

Volume or value — 1953 = 100

Index numbers of the stock of orders are underlined; volume indices are in italics

	Total orders					Home market orders					Export orders				
	1954	Fourth quarter		January-February		1954	Fourth quarter		January-February		1954	Fourth quarter		January-February	
		1954	1955	1955	1956		1954	1955	1955	1956		1954	1955	1955	1956
STEEL MILLS															
Belgium	132	151	177	159	163										
Western Germany	*197*	*245*	*204*	*222*	*217*	209	266	216	238	221	168	182	170	179	212
Italy	*124*	*127*	*135*	*140*[a]	*157*[a]										
Saar	112	141	191	169[b]	198[b]										
Austria	*105*	*130*	*300*	*167*[b]	..										
METAL-USING INDUSTRIES															
Belgium															
Ship-building	159	115	212	96	532										
Machinery	119	126	147	120	168										
Vehicles	126	105	152	121	123										
Electrotechnical equipment	100	115	127	104	130										
Heavy engineering	119	127	156	123	175										
Total metal-using industries *excl.* ship-building	112	115	139	117	141										
Western Germany															
Machinery	*139*	*189*	*187*	*164*	*175*	141	202	198	170	181	133	155	208	155	193
Vehicles	*130*	*170*	*160*	*155*	*163*	113	109	129	125	130	174	220	225	199	232
Electrotechnical equipment	*136*	*185*	*177*	*150*	*159*	130	181	171	144	154	140	156	225	150	211
Metal goods	*123*	*138*	*151*	*138*	*138*	118	133	151	134	140	131	146	153	152	150
Steel constructions	*119*	*189*	*160*	*111*[b]	*116*[b]	117	190	171	115[b]	129[b]	115	172	110	57[b]	54[b]
Total metal-using industries	*133*	*165*	*172*	*154*	*163*	127	160	166	147	156	138	161	193	164	197
West Berlin															
Machinery and vehicles	*126*	*139*	*170*	*163*	*166*										
Electrotechnical equipment	*143*	*181*	*178*	*201*	*169*										
Total producer-goods industries	*133*	*159*	*170*	*180*	*162*										
United Kingdom															
Machine tools[c]	130	171	162	..	..	133	186	173	..	..	125	131	131	..	..
Machine tools	91	96	121	103[b]	126[b]										
Ship-building[d e]	*77*	*77*	*95*	..	..										
Netherlands															
Ship-building	111	114[e]	146[e]	..	..	123	134[e]	164[e]	..	..	95	90[e]	124[e]	..	..
Machinery	101	101[e]	143[e]	..	..	101	97[e]	142[e]	..	..	101	109[e]	148[e]	..	..
Transport equipment *excl.* ship-building	124	111[e]	105[e]	..	..	127	113[e]	115[e]	..	..	118	102[e]	63[e]	..	..
Electrotechnical equipment	114	114[e]	133[e]	..	..	111	112[e]	140[e]	..	..	117	117[e]	128[e]	..	..
Total metal-using industries	110	111[e]	140[e]	..	..	111	114[e]	145[e]	..	..	106	106[e]	131[e]	..	..
OTHER INDUSTRIES															
Western Germany															
Textiles	*104*	*108*	*133*	*119*	*138*	102	105	128	117	134	112	117	123	113	117
Clothing	*105*	*117*	*132*	*108*	*112*	103	113	133	107	112	137	162	204	149	200
Shoes	*104*	*130*	*148*	*96*	*75*	102	126	145	93	74	153	235	222	203	164
Netherlands															
Textiles	112	112[e]	121[e]	..	..	121	121[e]	130[e]	..	..	99	99[e]	109[e]	..	..
Clothing	116	150[e]	192[e]	..	..	122	161[e]	207[e]	..	..	83	91[e]	106[e]	..	..
Shoes	135	166[e]	159[e]	..	..	144	177[e]	175[e]	..	..	98	115[e]	89[e]	..	..

Sources: National statistics.

[a] January-March.

[b] January.

[c] First quarter 1954 = 100.

[d] End of 1953 = 100.

[e] Stock of orders at the end of period.

replies predicting a continuing improvement in business conditions was less than in February 1955. In France the replies to the INSEE inquiry last November based expectations of generally improving conditions mainly on the strength of home demand—only 35 per cent expected any increase in export demand for their products as compared with the same period of the previous year. A special inquiry in March 1956 produced reports of a generally strong growth of demand this year, still concentrated in the home market.

Less formal surveys of conditions and opinion in the United Kingdom in recent months [17] reinforce the impression given by other data of a more marked contrast than elsewhere in Europe between the boom conditions in the capital-goods industries and the relatively depressed state of the textiles and consumer-durables sectors. In the capital-goods industries home and export demand is strong and order books have generally been lengthening: elsewhere stocks of finished goods are in some cases uncomfortably high and new orders flow in slowly.

The boom conditions in a number of countries in the industries supplying the investment sector are well illustrated by the figures of orders in Table 6. In Belgium export demand has been the major force behind the growth of orders for metal goods; and in Germany also it seems to have been the main factor, though rising home demand in recent months has contributed to the persistent lengthening of order books in several branches. In the Netherlands, too, both home and export orders have been rising. In the United Kingdom, on the other hand, growing home demand seems to have been considerably more important than the pressure of export orders in a number of sectors, though precise information is scanty.

Such quantitative data as are available suggest that in western Germany, Austria, Norway, Switzerland and the Netherlands the rate of growth of consumption has slightly increased since the autumn of last year (see Table 7). In the United Kingdom, Denmark and Sweden, on the other hand, the market for consumers' durable goods seems to have become more depressed.

The depression of consumer demand in Denmark and the slack demand for consumers' durable goods in the United Kingdom reflect the greater severity of the measures applied by these countries to restrain the general economic expansion and, in particular, the increases in taxation and credit restrictions which, during the last year, have been directed towards limiting consumption as well as restraining investment. In the United Kingdom export difficulties, affecting motor-cars especially, restrictions on hire purchase —more severe than those imposed elsewhere in Europe—and the pressure exerted on the banks to reduce advances have been largely responsible for the marked recession in the industries producing consumers' durable goods.[18] The value of sales on hire-purchase contracts by retailers fell steadily in every month from October 1955 to February 1956. Seasonal factors may account for part of this reduction; but more recent data on the number of hire-purchase contracts concluded (value figures not yet being available) show that the number of new contracts reported in April was 15 per cent less than in April 1955.[19]

One of the more interesting features of developments in recent months, however, has been the appearance, already noted, of slight signs of a possible revival in the textiles industries. Such information as is available is summarized in Table 8. It is by no means conclusive, but it suggests that at least the recession has gone no deeper in recent months and that falling stocks, some increase in exports from continental Europe and a stronger growth of consumption in a number of countries offer hope of slightly better conditions in the near future. Nevertheless, it would be unwise to conclude that anything more is in sight in this field than a continuing gradual growth of European demand, temporarily intensified by a cessation of the running down of stocks and possibly some re-building where those have fallen below normal levels. There is still no sign of any general revival of overseas demand for textiles.

The Demand for Investment

As has already been mentioned, the strong pressure of both home and export demand on the industries producing investment goods has hardly yet shown any significant reduction in most countries. The increases in company taxation, credit restrictions and rises in interest rates which have been fairly widely applied seem to have had very little effect so far on industrial investment, and indeed the object of more restrictive policies in most of the countries applying them has been to prevent an excessive growth of demand rather than to bring about an actual fall

[17] For example, the *Manchester Guardian Survey of Industry and Finance 1956* and *The Financial Times* of 27 March 1956.

[18] Bank advances to " personal and professional " borrowers and to hire-purchase finance companies were reduced by 14 per cent between August 1955 and February 1956, while total advances to all borrowers other than local authorities and nationalized industries fell by only 5 per cent.

[19] Data on the numbers of contracts cover a wider field than retail sales alone, including motor-cars and investment goods.

TABLE 7

Consumption and retail sales of selected commodities

Percentage increase over corresponding period of previous year
Changes in volume, except for figures in italics, which represent changes in value

	Food [a]	Tobacco	Clothing	Household textiles	Furniture	Hardware	Electric appliances	Total retail sales	Passenger cars [b]	Motorcycles and scooters [b]
United Kingdom										
1955 First half	2	1	3	6	*9*	*9*	*20*	4 [c]	37	..
3rd qtr.	—	4	4	3	*2*	*9*	*7*	4 [c]	49	..
4th qtr.	—	4	8	9	*8*	*15*	*11*	2 [c]	28	..
1956 1st qtr. [d]	..	..	..	7	—	*5*	*1*	..	23	..
Western Germany										
1955 First half	7	9	8	10	*12*	*13*	*13*	8	25	−25
3rd qtr.	7	10	9	9	*10*	*13*	*13*	9	33	−27
4th qtr.	8	9	11	14	*18*	*15*	*21*	11	52	−24
1956 1st qtr.	13	14	16	14	*18*	*15*	*20*	14	29 [d]	−53 [d]
France										
1955 First half		2	3		*11*	*7*	*15*	..	30	11
3rd qtr.	5	4	9		*26*	*9*	*22*	..	16	9
4th qtr.		5	9		*17*	*7*	*41*	..	23	1
Sweden										
1955 First half	2	3	5	..	*5*	*6*	*4*	4	8	..
3rd qtr.	1	3	−4	..	*−4*	*2*	*−1*	—	5	..
4th qtr.	−5	2	2	..	*−3*	—	*−7*	−1	−14	..
Norway										
1955 First half	4		3			*11*	..	4	32	−1
3rd qtr.	..	1	−1		2	*9*	..	5	−35	−54
4th qtr.	..		2			*8*	..	5	−55	−22
1956 1st qtr. [d]	..	..	5		..	*6*	..	8	..	..
Denmark										
1955 First half	−2	*2*	2		*5*	*3*		−3	−7	..
3rd qtr.	−6	*−4*	−13		*−18*	*−1*		−8	−52	..
4th qtr.	−4	*1*	−9		*−10*	*3*		−4	−30	..
1956 1st qtr. [d]	−3	..	−6		..	..		−3	−33	..
Netherlands										
1955 First half	6	5	11		*15*	*12*	*15*	8	..	..
3rd qtr.	7	6	8		*9*	*10*	*10*	8	..	..
4th qtr.	5	3	20		*13*	*10*	*29*	11	..	..
Austria										
1955 First half	11	6	5		*7*	*20*	..	11	149	36
3rd qtr.	4	9	21		*21*	*26*	..	11	114	9
4th qtr.	6	17	16		*22*	*16*	..	11	47	−14
1956 1st qtr. [d]	7	15	11		*25*	*22*	..	13	1	−45
Switzerland										
1955 First half	2	1	5		*25*	*15*	*15*	5	22	−18
3rd qtr.	3	2	6		*46*	*7*	*9*	7	28	—
4th qtr.	5	3	5		*28*	*12*	*7*	7	18	−21
1956 1st qtr.	11	7	8		*13*	*11*	*7*	11	44 [d]	1 [d]

Sources: National statistics.

[a] In western Germany, Denmark and Switzerland changes in the volume of sales of food include also sales of drink and tobacco.

[b] Based on new registrations or available supplies.

[c] Total private consumption, excluding housing, fuel, light, travel and entertainment.

[d] January/February 1956 as compared with January/February 1955.

TABLE 8

Indicators of conditions in the textiles industries

Percentage increase in volume over corresponding period of previous year

Production, orders and sales	1955 First half	1955 Third qtr.	1955 Fourth qtr.	1956 January
PRODUCTION				
Total western Europe	0	−2	1	
United Kingdom	−1	−4	0	
Continental western Europe	0	−1	1	3
EXPORTS				
Ten western European countries	−1	7	3	
Of which:				
United Kingdom [j]	−9	13	−9	
Nine countries [a]	4	4	9	
ORDERS				
Western Germany (volume of new orders)	14	15	24	16
Netherlands (value of stock of orders at end of period)	−4	−2	8	
WHOLESALE SALES				
United Kingdom	2	3	12	7
Western Germany	6	7	10	
RETAIL SALES				
Austria				
Textiles and clothing	5	21	16	11 [c]
Belgium				
Clothing [d]	6	11	10	2
Household textiles [d]	5	0	10	11
Denmark				
Textiles and clothing [e]	2	−13	−9	−6 [c]
France				
Textiles and clothing	3	9	9	
Western Germany				
Clothing [e]	8	9	11	16 [f]
Textiles and clothing	8	9	11	14 [f]
Netherlands				
Textiles and clothing	11	8	20	
Norway				
Textiles and clothing [e]	3	−1	2	5 [c]
Sweden				
Clothing	5	−4	2	
Switzerland				
Textiles and clothing	5	6	5	8 [f]
United Kingdom				
Clothing [g]	3	4	8	
Clothing and shoes [h]	7	7	9	3 [c]
Household textiles [h]	6	3	9	7 [c]

Stocks at end of period	1955 First half	1955 Third qtr.	1955 Fourth qtr.	1956 January
PRODUCERS' STOCKS				
Cotton yarns				
Belgium	6	8	0	
Denmark	−18	..	7	
France	14	7	2	−5
Italy	−1	−9	−13	−15
Norway	−8	−16	−19	
Cotton fabrics				
Belgium	−1	2	0	
Denmark	2	..	−9	
France	25	14	9	4
Italy	13	2	−4	−7
Norway [b]	3	0	−3	
Switzerland	17	1	−27	
Wool yarns				
Belgium	9	7	9	
Denmark	4	..	27	
France	−2	0	−4	3
Wool fabrics				
Belgium	17	10	5	
Denmark	10	..	−5	
France	−3	−1	−4	−8
Netherlands	19	4	−2	
WHOLESALERS' STOCKS				
United Kingdom [i]	−3	−6	−8	−2
RETAILERS' STOCKS				
United Kingdom [hi]	3	2	3	

Sources: National statistics.

[a] Austria, Belgium-Luxembourg, Denmark, France, western Germany, Italy, the Netherlands, Norway and Sweden.

[b] All textile fabrics, including wholesalers' stocks.

[c] January-February.

[d] Department stores only.

[e] Including shoes.

[f] First quarter.

[g] Consumers' expenditure at constant prices.

[h] Large retailers only.

[i] Stocks are valued at cost and refer to textiles and clothing.

[j] Comparisons are affected by the incidence of the dock strikes in the third quarter of 1954 and the second quarter of 1955.

in rates of investment. In fact, restraints have been applied with significant force only in the United Kingdom and the Scandinavian countries—and generally only very moderately in the early stages even there—and the force of credit restrictions has so far been moderated for private industry by the existence of adequate reserves.

In the United Kingdom, which has gone farthest in recent months in applying new restraints both to investment and to consumption, inquiries among business men early this year revealed little evidence that earlier plans, for investment in 1956 on a larger scale than in the previous year, had been substantially modified.[20] The official forecast is that, even if restrictive measures bring about a revision of plans by private industry and public bodies during this year, " the amount of work already put in hand is so large that the rate of expenditure on fixed investment is likely to be appreciably higher in 1956 as a whole than in 1955 ".[21] The expected increase has been stated to be " considerably more than £100 million " (as compared with an increase of nearly £300 million from 1954 to 1955).[22] It is clear that, in spite of a cut in public investment programmes for 1956 below the levels originally planned, actual public investment expenditure is likely to contribute to this increase.

Elsewhere such information as is available on the investment intentions of private industry or the expectations of public authorities indicates a further rise in 1956, though generally at a lower rate than that experienced last year. In France, however, the results of inquiries into the investment intentions of private industry suggest that investment demand in this sector may rise at least as fast this year as in 1955.

One exception to the general pattern is Norway, where the intention expressed in the national budget is to reduce gross fixed investment (excluding investment in ships) this year somewhat below the 1955 level. This reduction is intended to fall almost entirely on investment in dwellings and on other social investment. In Austria, also, there have recently been indications of some slackening of investment demand.

Among the other countries which have been applying significant restrictions in the past, an increase in investment above the 1955 level is foreseen in Sweden and, in Denmark, a rise in building activity is expected, largely as a result of an increase in public building. It seems unlikely, however, that industrial investment will rise significantly in Denmark unless either the general level of activity revives to a noticeable extent or some special stimulus is given.

Some further indication of future trends of industrial investment is given by the development of authorizations and starts of industrial building; and it is probably reasonable to assume that, in general, changes in demand for investment in plant and machinery tend to follow changes in the construction trends in this sector. The available data are summarized in Table 9. They suggest a continuing strong upward trend in western Germany, the Netherlands and Switzerland, with building authorizations or building starts well above the levels of the previous year. Authorizations for industrial building have recently been well above the previous year's level in Sweden also (although the high figure for the first quarter of this year is partly a reflection of an unusually low volume of work authorized in February 1955). At the other extreme, authorizations for new building in the United Kingdom have fallen below the previous year's levels, though it is to be expected that the amount of work completed will continue to rise for some time.

In general, these figures reinforce the impression given by other evidence of continuing strong demand for industrial investment in most of the countries for which data exist, with little more than a gradual slowing down of the rate of growth in prospect for some time to come.

Except in France and Italy, investment in housing was not an important factor in the expansion during last year. The prolonged bad weather at the beginning of this year, which naturally affected building more than other industries, will undoubtedly result in some temporary stimulus to construction activity of all kinds in later months to compensate for the earlier set-back. But over the year as a whole housing construction in most countries seems likely to be little if at all above the 1955 levels. Reductions in housing subsidies and other restraints on building by public authorities have become widespread during the past year, and there have also been some indications, particularly important in Italy, that the demand for unsubsidized private housing is now falling off. In France, however, housing activity is expected to be rather greater in 1956 than last year provided that public policies do not become more restrictive and that scarcity of building labour does not force a reduction of output.

Uncertainty about the longer run prospects for the building industries, the effects of credit restrictions on the willingness of timber importers to hold stocks and the extensive stockbuilding of timber, which

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[20] *Manchester Guardian Survey of Industry and Finance 1956* and speech by the Chancellor of the Exchequer quoted in the press of 5 May 1956.

[21] *Economic Survey 1956*, Cmd. 9728, paragraph 84.

[22] The Economic Secretary to the Treasury in the House of Commons, *Official Report*, 23 April 1956, Col. 1468.

TABLE 9

Indicators of building activity in certain western European countries, 1955 and 1956
Dwellings and industrial building

Percentage increase over same period of previous year

	Dwellings				Industrial building			
	1955			1956	1955			1956
	First half	Third quarter	Fourth quarter	First quarter	First half	Third quarter	Fourth quarter	First quarter
Belgium								
Authorizations	−8	−12	−6	..	+14[a]	−3[a]	+4[a]	..
Completions	−1	−5	−7	+4[b]	+3[a]	+7[a]	+5[a]	−6[ab]
Denmark								
Authorizations	−40	−23	+157	+35[c]	..	..	..	..
Starts	−42	−34	+68	+115[c]	+11	−8	+14	..
Completions	+7	+5	+10	+2[c]	+48	−21	−4	..
France								
Authorizations	−3	−1	+26	..	..	..	..	..
Completions	+34	+27		..	..	..	..	..
Western Germany								
Authorizations	+2	+2	−2	+11[b]	+36[d]	+42[d]	+45[d]	+90[bd]
Completions	—	—	+1	+11[b]	+21[a]	+16[a]	+14[a]	+33[ac]
Italy								
Authorizations	+11	−1	−1	..	−14[a]	−10[a]	+5[a]	..
Completions	+27	+11	+32	..	+24[a]	+26[a]	−16[a]	..
Netherlands								
Authorizations	+3	+64	−3	−8[b]	+18	+33	+10	+60
Starts	+18	+42	+23	+5[b]	+51	+16	−4	..
Completions	−17	−13	−3	+66[b]	+79	+29	+28	..
Norway								
Completions	−7	−4	−16	−12	−42	+27	−29	+11
Sweden								
Authorizations	−6	−17	+59	−2[c]	−23	−34	+46	+84[c]
Starts	−15	−23	+29	+36	..	..	..	..
Completions	−1	−4	−23	+28	−50	+22	−64	..
Switzerland								
Authorizations	+13	+15	−7	−15	+24	+8	+12	..
Completions	+12	−8	−8	+6	..	..	..	..
United Kingdom								
Authorizations	..	..	..	..	+80	−1	−13	−10
Starts	−13	+2	+5	..	+52	+85	−22	..
Completions	−7	−12	−8	..	−18	+39	+13	..

Sources : National statistics.

[a] All non-residential building.

[b] January.

[c] January + February.

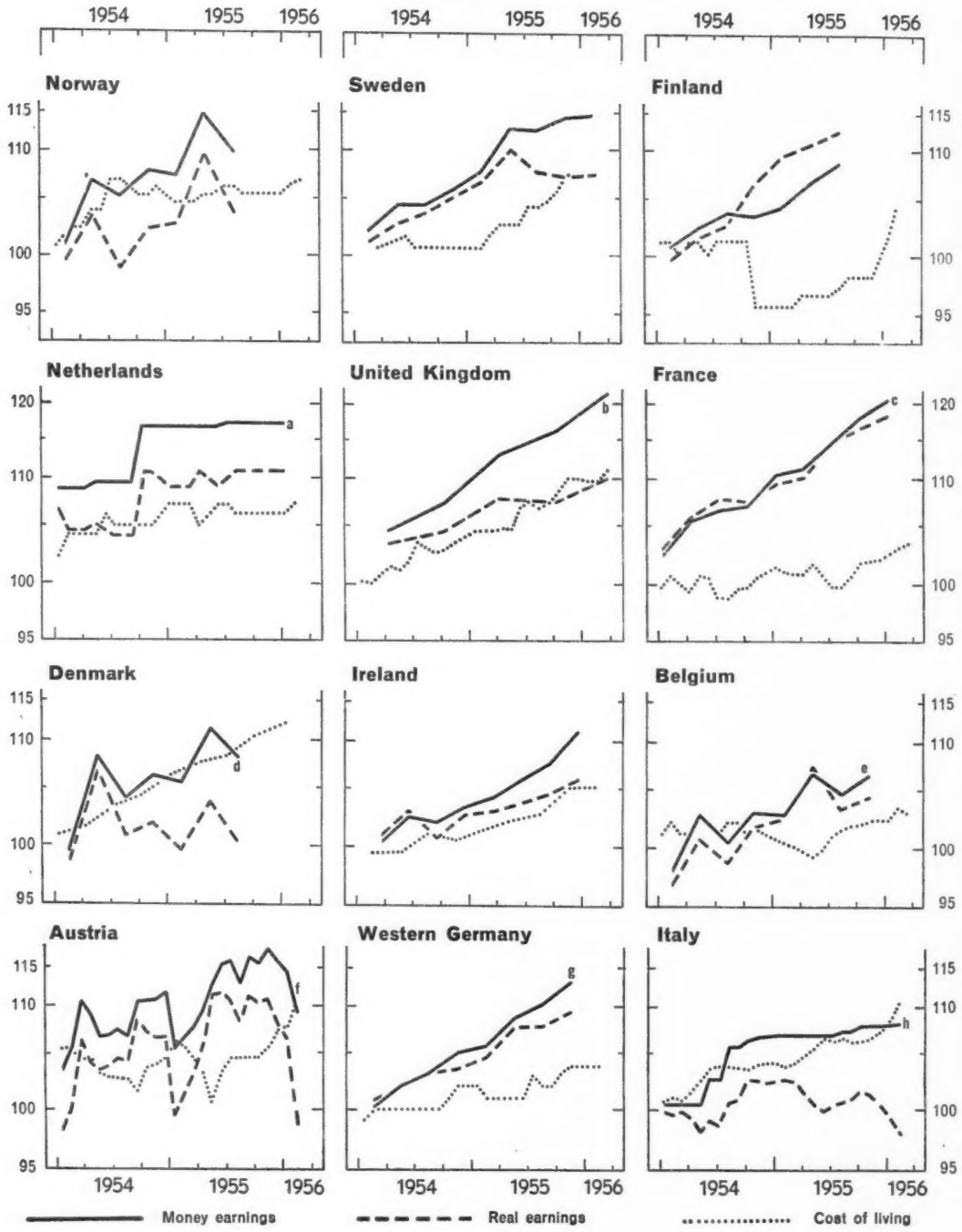
[d] Building for economic activity

CHART 5

Earnings in manufacturing industry, and cost of living

Index numbers 1953=100

Semi-logarithmic scale



Sources: National statistics.

a Wage rates. The series covers all men in industry (including building).

b Earnings in industry up to October 1955, extrapolated to March 1956 on the basis of indices of weekly wage rates for all activities.

c Wage rates.

d Industry, including building services and transport.

e The series covers men in metal industry only.

f Vienna only. Total industry, including building.

g Total industry, including building.

h Wage rates (including family allowances) of male workers in manufacturing industry.

occurred last year, have combined to depress demand in the western European timber market. This seems likely to reduce noticeably the export income of the timber producing countries of Scandinavia in 1956.

The Upward Trend of Wages

The rise of wage rates and earnings speeded up in most western European countries during 1955, with Belgium, Italy and the Netherlands as the main exceptions; and in general real wages also rose, though less rapidly (see Chart 5). Towards the end of the year, and in the early months of 1956, pressure for wage increases mounted in a number of countries under the influence of strong demand for labour and, in some cases, increases in the cost of living.

In the first quarter of this year agreements regulating wage levels throughout industry became due for re-negotiation in Norway, Sweden and Denmark, and the negotiations on the principles to govern new wage agreements in the Netherlands were completed in March.[23] In Finland the lapse, at the end of last year, of statutory powers permitting the Government to regulate prices and wages produced an immediate rise in food prices which precipitated a demand for general wage increases.

In both Denmark and Finland failure by the parties concerned to agree on the magnitude of the new wage increases resulted in general strikes on a scale not experienced in those countries for many years; and in Finland these strikes have caused losses of production estimated at about 2 per cent of the annual national income. In Norway negotiations on the new wage settlements are still in progress.

Strikes for wage increases, exceeding the 20 per cent rise in the basic wage [24] which came into effect on 1 April, have also occurred in Spain, in spite of the fact that in that country strikes are illegal. The strikes, " go slow " practices and working to rule were followed by lock-outs by the employers and Government.

These events, and the start of a new round of wage increases in the United Kingdom, have created an impression of suddenly heightened labour unrest and of a violent upward surge of wages throughout western Europe that is, in some respects at least, misleading. In Denmark, Sweden and Austria the wage settlements reached early this year provide for increases averaging between 2 and 4 per cent—in each case smaller than the increase conceded in the previous negotiations—and new claims cannot be put forward for another year (two years in Denmark) unless the cost of living increases significantly.

Finland is at the other extreme, and there the new wage settlements have resulted in increases in average rates of the order of 10 per cent. In the United Kingdom, also, the additions to the total wage bill resulting from settlements negotiated in the first quarter of this year have been proportionately greater (in relation to the numbers involved) than those which followed from settlements negotiated in the same months of 1955. In the Netherlands the recent agreements are expected to raise wage rates by some 5 to 6 per cent and—when increases in paid holidays and other benefits are taken into account—to raise wage costs by some 8 to 9 per cent.

In western Germany, Belgium, Italy and Switzerland no strong pressure for wage increases is apparent at the present time. But in western Germany, and in France, the rounds of wage increases which started in the second half of 1955, and which appear to have been completed in the early months of this year, seem certain to produce a rise in the average level of wages in 1956 as compared with 1955 at least equal to that registered in the previous year. In France, Belgium and Italy automatic wage increases in the near future are a possibility, as the cost-of-living indices in these countries are approaching the " critical " points. In France, moreover, the lengthening of paid holidays this year, and in Belgium reductions in working hours, will tend to raise industrial costs, though not consumers' incomes.

It is, of course, practically certain that, in the countries where strong demand for labour continues in all sectors of the economy, earnings will continue to drift upwards during 1956 at a rather faster rate than would be implied by a simple application of the new formal wage agreements. In these conditions overtime working raises average hourly earnings, and employers faced with acute labour shortage are willing to pay more than the agreed rates. These tendencies may, however, be mitigated in some countries (for example, in western Germany, Austria and Switzerland) by the existence of reserves of labour or the possibility of increasing the manpower available by immigration.

The efforts that are being made in a number of countries (for example in France, the Netherlands, western Germany and Finland) to prevent increases in costs being passed on in higher prices will tend to accentuate the resulting rise in real wages and in effective consumer demand.

[23] For a description of the systems of wage bargaining in force in the four countries mentioned, see the SURVEY for 1955, Chapter 5, Section 7.

[24] This represents a very much smaller percentage rise in actual wages, which include a variety of special bonuses and family allowances.

TABLE 10

Imports into three western European countries and the United States from primary producing countries

Millions of current dollars [a]

Year and quarter	Imports into the United Kingdom, France and western Germany			Imports into the United States		
	From countries [b] exporting mainly		From dollar area (except the United States and Canada)	From countries [b] exporting mainly		From dollar area (except Canada)
	Agricultural products	Mineral products		Agricultural products	Mineral products	
1954 I	1 705	501	96	536	257	684
II	1 742	519	111	537	304	681
III	1 450	550	112	378	271	579
IV	1 509	546	120	471	293	491
1955 I	1 798	597	133	465	340	680
II	1 624	611	140	465	341	625
III	1 486	662	156	472	347	571
IV	1 540	698	150	517	395	620
1956 I	1 705	699	170	..	..	..

Sources: Trade statistics of importing countries.

[a] C.i.f. value for European countries and f.o.b. value for the United States.

[b] Overseas countries outside the dollar area.

Overseas Demand for European Production

The continuing though unspectacular growth of total western European exports to overseas areas has already been noted in section 1 of this review. The underlying trend is difficult to distinguish because of the interruptions caused by the dock strikes which occurred in the United Kingdom both last year and in 1954, but there is no clear sign that the rate of expansion has changed noticeably during the period from the beginning of 1954 up to the first quarter of this year.

The two major factors influencing western Europe's future export prospects are the level of activity in the United States of America and—not unrelated to this—the development of the export earnings and foreign exchange reserves of the countries producing primary products.

In the United States the rate of expansion slackened perceptibly towards the end of 1955, and industrial output has levelled off during the first quarter of this year. Falling output of motor-cars has been the most important factor in this situation, reflecting a fall in consumer demand for durable goods in general in the fourth quarter of 1955. Production of motor-cars in the first four months of this year was about 20 per cent less than in the corresponding months of 1955, and there is no indication yet of any recovery in this sector.

A more than seasonal decline in house building also contributed to the slackening of activity towards the end of last year, but there are signs that a new expansion is now starting. However, the most expansive sector of the economy seems to be industrial investment. Expenditure on plant and equipment gathered momentum in the second half of last year, and the latest Department of Commerce survey of investment intentions has revealed plans for a level of expenditure by industry on plant and equipment this year 22 per cent greater than the actual level in 1955. Government expenditure is also expected to increase slightly, with overseas expenditure on defence and aid to other countries probably continuing for some time at about current levels.

The United States authorities clearly still regard the current task for economic policy as one of restraining inflationary tendencies rather than warding off a recession, and the trend towards "dearer money" has continued. If, in fact, industry's apparent invest-

ment plans are implemented, a resumed expansion of over-all output seems certain, though the rate of growth may well be less than last year.

The possibility of a continuing rise in total United States overseas expenditure, probably at a slower rate than in the recent past, is not only of direct importance for western Europe's export prospects in that country, but will also affect the prosperity of the primary producing countries which are an even more important market for western European production. However, there is normally a considerable time lag between a rise in a country's export income and the consequent change in its import policies or increase in its demand for imports; and the demand for imports into the primary producing countries in 1956 has to some extent already been determined.

In the SURVEY for 1955 it was pointed out that the increase in western Europe's imports during the economic upswing of 1953 to 1955 had not been of any great benefit to those overseas countries dependent mainly on exports of agricultural produce,[25] and that the purchasing power of those countries' exports was probably no greater last year than in 1954. Table 10 shows the recent trends of imports by the major industrialized countries from the main primary producing areas. The three principal industrialized countries of western Europe with the United States provide the greater part of the export income of the primary producing countries; and, as can be seen from the table, there is little sign that the continued expansion in the industrial countries has yet produced any significant increase in the export incomes of the " agricultural " primary producers as compared with the situation two years ago.

As was explained in the SURVEY, the stagnation of the export earnings of the " agricultural " countries reflects both the pattern of the increase in output in the industrialized countries and the decline in prices of a number of basic foodstuffs and of textile raw materials during the last two years. As can be seen from Chart 6 in section 4 of this review, there is little indication yet of any reversal of those price trends, although prices of textile materials have hardened in recent months; and the existence of large agricultural surpluses in the United States is a continuing depressing influence.

The fall in the foreign currency reserves of the " agricultural " overseas countries has also continued, while the reserves of the " mineral-producing " countries have continued to rise.

[25] See SURVEY for 1955, Chapter 1, section 4.

Reserves of Gold and Foreign Exchange Holdings of Selected non-dollar Overseas Countries

(Billions of U.S. dollars)

End of month	*Agricultural producing countries* [a]	*Mineral-producing countries* [b]
December 1953 . . .	6.90	0.95
December 1954 . . .	6.75	1.00
June 1955 . . .	6.30	1.10
December 1955 . . .	6.20	1.20
January 1956 . . .	6.10	1.25

Source : International Financial Statistics, International Monetary Fund.

[a] Argentina, Brazil, Paraguay, Peru, Uruguay, Australia, Burma, Ceylon, India, New Zealand, Pakistan, Union of South Africa, Egypt, Israel, Lebanon and Syria.

[b] Chile, Iraq, Indonesia, Iran and Thailand.

In a number of overseas countries rapidly rising levels of internal activity and demand for imports have contributed to the worsening of their balances of payments; and in some sterling area countries adverse movements of short-term capital, following on the rise in interest rates in the United Kingdom, have added to the strains on reserves. Policies to damp down the growth of demand have been strengthened in a number of countries of the sterling area, in some cases involving measures which bear particularly heavily on demand for imported goods, and elsewhere there have been some increases in taxes on imports, and some intensification of quantitative import restrictions. Although some other overseas countries are now adopting somewhat more liberal import policies, it seems likely that, on balance, the market for western Europe's exports in the overseas primary producing countries may become somewhat more difficult this year.

Balance-of-payments Prospects

The probability of an increase this year in western Europe's needs for imports of coal, petroleum and steel has already been discussed, and some increase in imports of cereals may also be required. The severe weather in February and March caused considerable damage to crops in a number of countries. Where winter wheat was destroyed there has usually been time for re-seeding with spring wheat or fodder crops, but it is nevertheless probable that grain yields will be somewhat reduced as compared with last year. The most serious damage to cereals crops occurred in France where losses of wheat appear to have removed all hope of an export surplus this year and are unlikely to be fully offset by increases in other crops.[26]

[26] The most serious damage to other crops occurred in southern Europe—in Spain, France and Italy—where olive groves, fruit trees and early vegetables suffered severely. To some extent increases in prices will offset the effects on producers' incomes and export earnings; but where competing supplies from other areas prevent any rise in price (as may well be the case with citrus fruits) the loss of income to the producers may be considerable.

Unless government policies become considerably more restrictive, it is to be expected that demand for imports of other goods also will increase, with generally rising activity, although stocks built up during 1955 may reduce the need for higher imports in some countries. The " liberalization " of imports, particularly from the dollar area, which has been proceeding during the last year is likely to increase the tendency for imports to rise.

These considerations, and the export prospects already discussed, suggest that some worsening of western Europe's balance-of-payments position later in the year would not be surprising. But this is a field in which even the most guarded prophecy is notoriously risky. Certainly, in spite of some worsening of the balance of visible trade of the main western European countries as a group, there is no sign yet in the movement of foreign exchange reserves of any change from the fairly stable situation of last year. There has recently been a slight fall in the reserves of the timber-producing countries of Scandinavia and in those of France; but, on the other hand, the position of the United Kingdom—which was the only country to suffer a major decline in reserves last year—has recently shown some improvement.

4. The Influence of Government Policies

Policies to Control the Expansion

Governments in most countries have demonstrated their faith in—or fear of—the strength of the demand for European production by continuing or even intensifying the policies of mild restraint adopted last year. During 1955 only the United Kingdom, Norway, Sweden and Denmark adopted, or reinforced, generally restrictive policies. Elsewhere, if restraints of any kind were imposed, more restrictive policies towards investment were to some extent balanced by income tax concessions or by reductions in indirect taxes, which also tended to raise consumption though designed primarily to keep down prices.[27]

In the early months of this year a more widespread concern at the possibility of an excessive rise in demand has become apparent. In western Germany and in France increases in government defence expenditure appear inevitable, though in western Germany the rise seems likely to be moderate this year. Increased social security benefits in both countries, and income tax reductions in western Germany, will tend to add to consumer incomes. In most countries, however, attempts are being made to hold down government expenditure both on current and capital account and there is a generally cautious attitude towards tax concessions.

In the United Kingdom, Bank Rate has again been raised—from 4½ to 5½ per cent—restrictions on new capital issues have been intensified and taxation of company profits slightly increased; the scope and severity of hire-purchase regulations have been extended, and increases in indirect taxes and reductions of subsidies will tend further to restrain the growth of consumption in real terms. In Finland the reaction to the recent wage settlement has been an attempt to offset its effect on prices by reducing the taxation of enterprises while raising purchase taxes on a few goods, mainly imports. At the same time Bank Rate has been raised from 5 to 6½ per cent and warnings of a possible further tightening of credit policy have been issued. In Norway an agreement between the Government and the banks restricting bank advances during 1956 and 1957 to the 1955 level has recently reinforced earlier measures to restrain investment; and in Sweden the commercial banks and other credit institutions have been requested to reduce their loans and advances by the end of August to at least 5 per cent below the level at which they stood at the end of July 1955. Discount rates have again been increased in western Germany (by 1 per cent); and in the Netherlands the first increase since 1953 has recently come into effect (a rise of ½ per cent). In Ireland, Bank Rate was raised by 1 per cent in December; more recently an import levy on a wide range of " less essential goods " has been introduced and hire-purchase restrictions have been imposed with the object of limiting consumption, while capital expenditure is being encouraged.

The general impression remains that most governments in western Europe have now joined those of the United Kingdom and the Scandinavian countries in applying brakes to the boom in order to avoid the danger of an excessively rapid growth of demand. But in most cases the brakes are being applied with a degree of caution that would appear entirely consistent with the comfortable balance-of-payments position of most of these countries and the capacity for further expansion of output in the consumer-goods sectors.

Even where governments are not trying significantly to damp down the expansion of demand, however, they are in many cases taking other measures designed to check tendencies for prices to rise.

[27] For a more comprehensive account of changes in fiscal and credit policies during 1955, see the Survey for 1955, Chapter 1, section 3, and Chapter 3, sections 5 and 6.

Policies to Check the Rise in Prices

Changes in government policies on indirect taxation and rents, especially in the United Kingdom, and the effects of temporary shortages (e.g., of vegetables) due to bad weather throughout western Europe, have contributed to the upward movements of cost-of-living indices in most countries in recent months which are shown in Chart 5. In Finland the end of price controls also contributed to the particularly sharp rise at the beginning of this year.

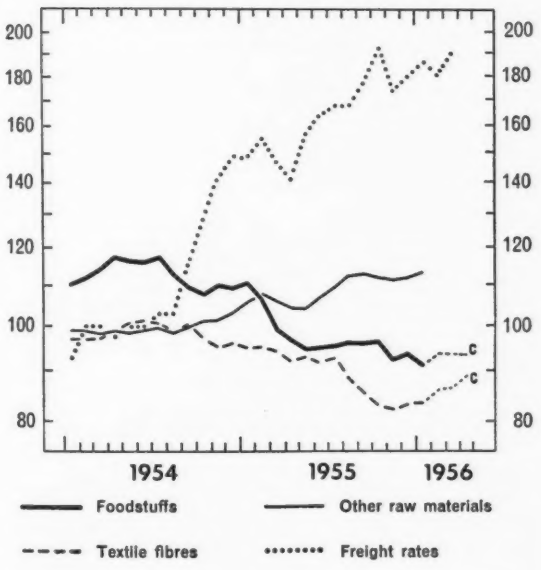
As was pointed out in the SURVEY for 1955,[28] although prices of services and of fuel and power rose in many countries during 1955, and contributed to the rise in cost-of-living indices, retail prices of manufactures did not in most cases increase significantly. One part of the explanation of this phenomenon is the stability of prices of western European imports of raw materials during 1954 and the first half of 1955, with rising metal prices balanced by falling prices of textile materials and general price stability in other categories (see Chart 6). A further stabilizing influence has been the rise in productivity in manufacturing industry which has, in most countries, been at least sufficient to offset the effect of rising wages on production costs. The United Kingdom is the most notable exception to this rule.

[28] Chapter 1, section 3.

CHART 6

Price indices of imports [a] and freight rates

1953=100 — Semi-logarithmic scale



Sources : Import price indices: *OEEC Statistical Bulletins ;* Freight rates : British Chamber of Shipping.

[a] The indices are intended to show price movements of imports into OEEC countries from overseas sources. They are fixed-weight indices of quotations in the main supplying countries.

[b] British index for voyage charter, dry cargo.

[c] Secretariat estimates.

Western Europe appears to have been benefiting from stable import prices for basic commodities in general during the early months of this year. There have, however, recently been signs of a stronger upward trend of prices of some industrial raw materials. Moreover, freight rates are rising rapidly under the influence of Europe's growing needs for coal imports, reinforced recently by the effects of rising imports of cereals into eastern Europe. At the same time, with the possibility that the rate of growth of productivity in a number of countries may be tending to slow down as the margin of spare capacity in many industries disappears, the danger of a rise in wage costs is increased, though new equipment coming into operation will offset this tendency to some extent. Coal and steel prices have already been raised in a number of countries this year and increased reliance on American coal will also raise over-all fuel costs.

In these conditions, there are noticeable differences between the policies pursued in the United Kingdom, Norway and Denmark and those used by a number of other countries in the effort to prevent a continuing inflation of internal costs and prices. It has been seen that, in a number of continental European countries, the main emphasis is on fiscal measures—reductions in indirect taxes and increases in subsidies—or on price controls which have the immediate effect of increasing real purchasing power in the hands of the consumer. Broadly speaking, the dangers of " cost inflation " are combated by measures which tend to add to " demand inflation ". An example of such a policy is the recent decision in western Germany to grant indirect subsidies to coal mines, to prevent the impending rise in costs resulting from increases in miners' wages from being passed on in the form of higher coal prices. Fiscal measures in France and Finland and price policies in the Netherlands have a similar effect.

Such a policy may well be the most suitable for dealing with the problem of cost inflation, provided that resources are available to meet any consequent increase in consumer demand so that new price increases are not induced. In most continental countries, as is mentioned above, a healthy balance-of-payments position and rising foreign exchange reserves in fact make it possible to contemplate with reasonable equanimity an increase in imports to

provide those additional resources. Barriers to imports have recently been reduced in France and Germany, and further measures of the same kind are contemplated in the future, as a means of avoiding excessive pressure of demand.

The United Kingdom, Denmark and Norway, however, are among the countries whose balance-of-payments position is still far from satisfactory. In those countries, therefore, the emphasis of anti-inflation policy has been on measures to restrain demand even by means—such as reductions in subsidies and increases in indirect taxes—which offer a direct inducement to the trade unions to advance new wage claims. Unless the wage earners concerned exercise restraint in pressing wage claims, even in the face of rising prices, governments pursuing such policies may be obliged to go much farther than would generally be considered desirable in cutting back internal activity and employment in the attempt to avoid inflation and balance-of-payments difficulties.

5. The Allocation of Resources in the Soviet Union and Eastern Europe

In the three countries where party congresses have recently been held—the Soviet Union, eastern Germany and Rumania—the framework of the Five-year Plans starting in 1956 is known with some precision, though much work still remains to be done by national planning offices before the global objectives can be translated into detailed targets for individual enterprises.[29] Drafts of the Second Five-year Plans have been published in Albania, Czechoslovakia and Hungary. More will presumably be known about their interrelations and about the extent to which countries are co-operating in joint projects, after the round of party congresses, at which the plan directives are to be discussed; the Hungarian and Albanian congresses are to be held in May, the Czechoslovak and Polish congresses in June.

It has, however, for long been known that a renewed emphasis was to be given to investment in all the countries, and in particular to investment in heavy industry; and this is already reflected in the short-term plans for the year 1956. Only Bulgaria, which —unlike the other countries—is now in the penultimate year of a five-year planning period, is a partial exception: there too investment in heavy industry is to increase, but all other types of investment are to be cut, and the total volume of fixed investment is, on balance, to be about 15 per cent below that of 1955. In Poland the proportionate increase planned for investment (9 per cent) is probably not much greater than that planned for national income. But elsewhere in eastern Europe the increases in the total volume of investment planned are very considerable : around 20 per cent in Czechoslovakia and Hungary, 30 per cent in Rumania and 40 per cent in eastern Germany. Hungary, it will be recalled,[30] went through a critical period in 1954 and 1955, when investment programmes were drastically cut back, and even if this year's plans are fully realized investment will still be running at a level 30 per cent below that reached in the over-strained economy of 1953. It is more difficult to judge exactly how the Rumanian investment plans for 1956 compare with the peak year achievements of the past [31] but it would seem that they presuppose a considerably higher level than any so far reached. The same is true of eastern Germany—where, however, investment has hitherto taken an unusually small share of national product—and of Czechoslovakia.

The increases planned for investment in heavy industry are even more striking: as Table 11 shows, these are to be 35 per cent in Rumania and as much as 50 per cent in eastern Germany and Hungary. Even in the Soviet Union, where the total volume of investment is to be only 15 per cent greater than in 1955, investment in heavy industry is to go up by nearly one-quarter. In earlier periods of quickly expanding investment in heavy industry a large part of the increment went into the basic industries and bore fruit only slowly. In the current period, though investment in mining everywhere continues to be pressed hard, the emphasis is more on engineering industries. And, in general, capacity is to be expanded by re-equipment of existing factories, rather than by new building.

[29] There are signs that in the eastern European countries the staffs of individual enterprises are being drawn into the formulation of these targets to a much greater extent than in the past. In Poland draft proposals were despatched to enterprises in January for return, with comments and alterations, by May. In Hungary the staffs of over three hundred enterprises were commissioned to prepare draft plans for their plants and the first draft of the over-all plan has been submitted to party, trade union and social organizations: the general public, moreover, has been explicitly asked to submit comments.

[30] See Survey for 1955, pp. 228-230.

[31] The year-to-year fluctuations in the volume of Rumanian investment were evidently less dramatic than is suggested by Chart 13 in the Survey for 1955, which was based on Rumanian statistics now stated to be imperfectly adjusted for changes in prices, but it is still impossible to correct the figures at all precisely. The most that is certainly known is that both the percentage increase from 1951 to 1953 and the reduction from 1953 to 1954 were both smaller than shown in the chart. It seems probable, however, that the recovery in 1955 restored investment to nearly its 1953 level.

TABLE 11

Volume of state fixed investment in the Soviet Union and eastern Europe 1955-1956

Percentage of total in 1955

	Heavy industry	Light industry	Agri-culture	Housing	Transport	Other	Total
Soviet Union							
1955	56	8	11	(14[a])	12	13	100
1956 Plan	69	6	15	(20[a])	16	9	115
Bulgaria[b]							
1955	34	5	20	6	35		100
1956 Plan	41	4	14	6	8	12	85
Eastern Germany							
1955	46	6 *	11	15	10	12	100
1956 Plan	70 *	6 *	14 *	19	15	16 *	140
Hungary							
1955	34[c]	10	23[d]	11	8	14	100[d]
1956 Plan	51[c]	3	24[d]	17	12	15	122[d]
Poland							
1955	44		16	13	13	14	100
1956 Plan	50		18	15	26		109
Rumania							
1955	49	> 8	14		29		100
1956 Plan	66	< 9	14	6	10	26	130
Czechoslovakia							
1955	< 50		11	..	..	..	100
1956 Plan	..		14	..	..	..	122

Sources: **Soviet Union:** Table 128, SURVEY for 1955; **Bulgaria:** *Rabotnichesko Delo*, 14 and 15 December 1955, 21 January and 2 February 1956; **Eastern Germany:** *Neues Deutschland*, 6 December 1955; **Hungary:** Information transmitted by the Hungarian Central Statistical Office; *Szabad Nép*, 20 to 22 April 1955, 17 and 18 November 1955 and 10 February 1956, and Plan Fulfilment Report; *Közgazdasági Szemle*, No. 12, 1955, pp. 1430-1431; *Társadalmi Szemle*, No. 12, 1955, pp. 6, 13; **Poland:** Table 125, SURVEY for 1955, *Trybuna Ludu*, 25 April 1956; **Rumania:** *Scinteia*, 28 to 31 March 1956; **Czechoslovakia:** *Rudé Právo*, 10 and 11 February 1956.

[a] Included in the other columns.

[b] Total fixed investment, including investment by credits and ploughed-back profits.

[c] Including investment in building.

[d] Including investment in agriculture financed by credits.

Thus, in eastern Germany and Czechoslovakia the share of investment resources devoted to machinery, as distinct from building, is to continue to increase:

Distribution of Fixed Investment

Percentage of total

Eastern Germany	*1951-1955*	*1955*	*1956 Plan*
Machinery and equipment	42	45	51
Construction	51	49 *	44 *
Other	7	6 *	5 *
Czechoslovakia			
Machinery	29[a]	32	34
Other	71[a]	68	66

[a] 1954.

In Poland completely new projects are relatively few; in Czechoslovakia and Hungary allocations for repairs are being increased; everywhere stress is laid on the importance of modernization.

The current investment drives are thus of quite a different kind from those of the early 'fifties. Moreover, they are taking place at a time when substantial cuts in defence expenditure are being made. Compared with last year's budget forecasts the defence reductions are of 9 per cent in the Soviet Union,[32] and in eastern

[32] While this *Bulletin* was in the press the Soviet Government announced that 1.2 million men in the armed forces were to be demobilized by the beginning of May 1957 and that as a result defence expenditure would be further reduced. The effect on expenditure in the calendar year 1956 was not specified.

TABLE

The public accounts of the Soviet Union

Billions, in

	SOVIET UNION			ALBANIA			BULGARIA			CZECHOSLOVAKIA		
	1955		1956	1955		1956	1955		1956	1955		1956
	Budget	Actual	Budget	Budget	Actual	Budget	Budget	Actual	Budget	Budget	Actual	Budget
EXPENDITURE												
National economy	223.3	217.4	237.3	4.6	4.6	5.1	9.4	9.5	9.8	43.9	40.8	48.1
of which:												
Investment	109.3	..	118.4	2.2	..	3.6	4.0	..	4.0	22.8	20.7	25.2
Agricultural development	55.1	48.1	48.6	1.2	..	1.0	2.0	2.0	2.1	7.9	7.4	8.8
Other economic expenditure	57.9	..	70.3	1.2	..	0.5	3.4	..	3.7	13.1	12.6	14.1
Defence	112.1	..	102.5	1.4	1.5	1.1	1.9	1.8	1.5	10.4	..	9.6
Welfare	147.0	146.7	161.5	2.3	2.1	3.9	3.8	3.8	4.1	28.3	27.1	28.8
Administration	12.6	12.5	12.5	3.4	..	3.7	0.7	0.7	0.7	3.4	..	3.4
Other expenditure	69.5	..	55.8				1.4	1.2	1.4	—	—	—
Total	563.5	537.8	569.6	11.6	10.6	13.8	17.3	17.0	17.6	86.0	79.1	89.9
RECEIPTS												
Turnover tax	233.7	242.9	271.1	..	..	..	..	5.4	5.8	44.9	44.5	45.8
Receipts from profits of state enterprises	117.5	101.2	107.3	..	..	..	..	3.0	4.2	13.0	11.8	14.4
Direct taxes	48.4	..	50.3	1.0	..	1.0	1.1	1.1	1.2	10.3	..	10.7
State loans	30.5	..	32.2	0.5	..	—	0.3	0.4	—	..	..	..
Social insurance premia	26.5	..	28.5	2.7	..	3.1	2.6	7.5	7.4	12.0	12.2	12.7
Increase in savings bank deposits	10.0	6.8	5.0							6.0	..	6.7
Other receipts	123.6	..	98.2									
Total	590.2	561.5	592.7	12.3	12.7	14.3	18.2	17.5	18.5	86.2	81.3	90.3
of which:												
From socialized sector	497.3	472.0	501.3	8.1	8.3	10.1	14.2	8.4	10.0	73.1	68.8	77.2
SURPLUS OF RECEIPTS OVER EXPENDITURE	26.7	23.7	23.1	0.7	2.1	0.5	0.9	0.5	0.9	0.2	2.2	0.4

Sources: **USSR:** Table 88, SURVEY for 1955, p. 184, and *Planovoe Khozvaistvo*, No. 1, 1956. **Albania:** Appendix Table III, *Economic Bulletin for Europe*, Vol. 7, No. 2, p. 29; Tirana Radio, 3 April 1956, *Rudé Právo*, 4 April 1956. **Bulgaria:** Table 22, *Economic Bulletin for Europe*, Vol. 7, No. 1, p. 39; *Rabotnichesko Delo*, 2-3 February 1956. **Czechoslovakia:** *Rudé Právo*, 23-24 March 1955, 10-11 February 1956. **Eastern Germany:** *Deutsche Finanzwirtschaft*, No. 5 and No. 8, 1956. **Hungary:** Appendix Table III, *Economic Bulletin for Europe*, Vol. 7, No. 2, p. 97; *Szabad Nép*, 2 October 1955 and 10-12 February 1956. **Poland:** *Trybuna Ludu*, 5 April 1955, 25 and 29 April 1956. **Rumania:** Table 12, *Economic Bulletin for Europe*, Vol. 7, No. 2, p. 19, and *Scinteia*, 28-31 March 1956.

Europe range from 8 per cent in Czechoslovakia to more than 20 per cent in Hungary, Bulgaria and Albania.[33] How much these represent in real terms is unknown: except in Bulgaria (see Table 12) figures of actual expenditure on defence in 1955 have not yet been published. Nor is there any means of judging to what extent the important reforms of the structure of wholesale prices which were introduced at the outset of the new Five-year Plans in several countries have destroyed the comparability of the series. But there is little doubt that, despite the defence cuts, outlays on investment and defence together are to take a larger share of national income in eastern Europe (Bulgaria once more excepted) than has been the case in the recent past. Standards of living are thus likely to continue to rise, but less fast than national incomes and less fast than in the last two years. In particular, though little is known about the balance-of-payments positions of eastern European countries, it is clear from the unusual emphasis given in several countries to the export drive that allocations of foreign exchange for import of consumer goods will be very tight. Thus, in Hungary, where the ratio of foreign trade to national income is said to be " larger than in any other people's democracy ",[34] it is admitted that " the targets for

[33] In eastern Germany, however, defence expenditure appears for the first time in the 1956 budget.

[34] *Szabad Nép*, 25 March 1956.

12

and eastern European countries

national currencies

Eastern Germany			Hungary			Poland			Rumania			
1954	1955	1956	1955		1956	1954	1955	1956	1955		1956	
Actual	Actual	Budget	Budget	Actual	Budget	Actual	Budget	Budget	Budget	Actual	Budget	
												Expenditure
14.3	14.3	14.2	25.2	22.6 *	22.5	68.7	89.8 [a]	73.4	24.4	25.5	26.1	National economy
3.7	3.0	4.7	9.0	9.8	7.8 [b]	29.1	..	38.0	9.1	9.3	11.0	of which: Investment
10.6	3.2	3.8	16.2	12.8 *	14.7	..	..	13.0	4.4 [c]	16.2	3.6	Agricultural development
	8.1	5.7				..	..	..	10.9		11.5	Other economic expenditure
—	—	1.0	7.8	7.8 *	6.0 *	10.9	11.9	12.1	4.5	..	4.0	Defence
11.8	12.1	11.5	10.5	10.7	11.5	26.2	..	32.3	6.9	6.8	7.7	Welfare
2.7	2.7	2.7	2.0	2.0	2.1	10.1	10.3	18.9	1.3	..	1.4	Administration
6.6	7.0	6.0	—	—	—	0.5 [d]	..		5.9	..	5.2	Other expenditure
35.4	36.1	35.5	45.5	43.1	42.1	116.5	115.0	136.7	43.0	42.7	44.4	Total
												Receipts
..	..	..	26.3	25.8	27.6 *	..	..	..	..	..	17.3	Turnover tax
..	..	..	3.6	3.6 *	5.6	..	..	..	..	..	7.9	Receipts from profits of state enterprises
7.1	7.3	7.5	3.8	4.2	4.2 *	11.9	12.8	17.2	3.3	..	3.9	Direct taxes
..	..	..	0.9	1.1 *	1.5 *	12.6	..	..	..	..	..	State loans
5.7	5.7	5.7							1.8	..	2.1	Social insurance premia
2.7	2.1	2.9	12.4	10.2	4.4 [b]	5.9	3.9	1.6	15.2	..	14.2	Increase in savings bank deposits
												Other receipts
35.5	36.2	35.5	47.0	44.9	43.3	116.8	122.0	141.3	44.4	44.2	45.4	Total
												of which:
20.0	21.1	19.4	34.9	34.4	34.4	86.3	105.3	122.5	24.1	..	25.2	From socialized sector
0.1	0.1	0.0	1.5	1.8	1.2	0.3	7.0	4.6	1.4	1.5	1.0	Surplus of receipts over expenditure

Note. — It should be observed in comparing the accounts for 1955 and 1956 in the Soviet Union, Czechoslovakia, eastern Germany, Poland and Rumania that substantial revisions of wholesale prices came into effect in the latter half of 1955 or at the beginning of 1956.

[a] Including welfare.

[b] These figures are not comparable with those for earlier years because in 1956 a smaller share of enterprises' receipts and expenditures is to be routed through the government accounts.

[c] Includes a certain amount of self-financing.

[d] State loans.

foreign trade in the plan for 1956 are strained ".[35] In Poland, where in 1955 imports were higher than had been planned and exports lower, the necessity to repay credits imposes an extra strain on the balance of payments in 1956, and warnings have been issued that imports of consumer goods cannot continue at the 1955 rate and that, for lack of materials, some capacity in light industry may not be fully used. In eastern Germany, where credits also fall due for repayment, imports were already squeezed in 1955, and as investment demand competes directly with export demand in the engineering industries the supply position is hardly likely to improve. Hungary, Rumania and Bulgaria have to make payments for the shares in the Soviet mixed companies. Only Bulgaria with its recent credit from the Soviet Union and its substantial agricultural exports seems to be in an easier payments position.

At least four quite different aspects of the nebulous concept, the average standard of living, can be distinguished: supplies of consumer goods and services bought by individuals (personal consumption in the narrow sense), the supply of communal services provided by the State, the supply of dwelling-space and leisure.

It is characteristic of current policies throughout eastern Europe, as well as in the Soviet Union, that

[35] *Közgazdasági Szemle*, No. 1, 1956, p. 1.

considerably greater attention is being paid to the last three of these aspects.

In the Soviet Union and Bulgaria the sixth day of the working week (normally Saturday) has been shortened by two hours, thereby reducing the normal working week from 48 to 46 hours. The reduction in the Soviet Union is stated to be the first stage in a gradual transition (to be completed by 1960) to a 42-hour week. Proposals for shortening the working week were approved in Hungary by the Party Congress in March and are being considered in eastern Germany, while in Poland instructions were issued for the abolition of voluntary (unpaid) overtime. Maternity leave in the Soviet Union has been lengthened from twelve to sixteen weeks, and in Hungary it is proposed to lengthen paid holidays, gradually over the next five years, from 12 to 24 days a year. The budgets for 1956 (see Table 12) show increases in expenditure on social services,[36] the most important being a rise of 10 per cent in the Soviet Union. Investment programmes everywhere, Bulgaria only excepted, provide more funds for house construction both by the State and as credits to private builders.

[36] Table 12 shows a fall under this head of expenditure in eastern Germany, but this results from a transfer from the central budget of some parts of the social security system and does not seem to involve any reduction in benefits.

6. Income and Price Policy in the Soviet Union and Eastern Europe

The Soviet Union

In his report to the XX Congress of the Communist Party of the Soviet Union Mr. Khrushchev announced that the increment of personal consumption was for the time being to be distributed over the population on somewhat different principles from those followed in the recent past. During the period of the Fifth Five-year Plan more than two-thirds of the increase in real wages had occurred in the form of reductions in retail prices.[37] Meanwhile the structure of wages had developed a number of anomalies and was in need of reform. The time had therefore come to distribute a greater share of the increment in the form of increases in the money incomes of those whose relative position had deteriorated—principally the lower-paid workers, pensioners and some professional groups—and of those with inadequate incentives, and a smaller share in the blanket form of price reductions.

A beginning has already been made in the implementation of this policy. No retail price reductions were announced on 1 April, the date which until 1954 had become usual for such changes, nor were any—even minor—price adjustments announced during the quarter. Meanwhile, increases in the pensions scheme, affecting particularly the smaller pensions, have been announced, and workers in machine and tractor stations, state farms and medical staff have been granted increases in pay. The lower income groups will also benefit especially from the abolition of fees for secondary schools and higher education.[38] The Trade Union Central Committee, meeting in March, called for a review of premia paid for success in socialist competitions: allegations were made of excessive payments to highly paid staff at the expense of those to lower grades.

At the same time some revisions of wages, designed to improve incentives, have been announced for building workers, and a thorough re-examination of the industrial wage-structure is under way.

The real incomes of farmers have been raised considerably during the last three years by increases in procurement prices. In February a decree was issued which substantially raised the prices offered for potatoes and vegetables.[39] It was explained in a *Pravda* editorial (2 February 1956) as intended to bring income per hectare [40] from these crops into line with those from such " highly profitable crops " as flax and hemp, whose price had been increased in 1954. But the fact that milk prices were left unchanged in spite of a decree [40bis] outlining measures for doubling supplies in the text two years suggested that the adjustments of vegetable prices were more in the nature of a correction of an isolated anomaly than a continuation of earlier policies. This view is confirmed by a government statement addressed to farmers in April which explicitly stated the official view that " prices

[37] The share was considerably smaller for collective farms most of whose increment in real earnings derived from higher unit payments for state deliveries.

[38] In anticipation of the extension of secondary education a campaign has been launched to dissuade secondary schoolleavers from seeking white-collar jobs. Mr. Khrushchev, in a speech to young building workers in April, said that a girl, after 10 years' schooling, should not despise becoming a milkmaid.

[39] Procurement prices for potatoes delivered under compulsory quotas were almost trebled and prices for supplementary sales to the State were raised by 70 per cent. In the case of other vegetables, prices for both compulsory and supplementary deliveries were increased on the average by 70 per cent.

[40] Excluding, of course, the earnings of machine and tractor stations, which are increasingly in the nature of Ricardian rent.

[40bis] Decree of 10 February 1956.

are now at a level which, under conditions of a good harvest and high livestock productivity, will not only fully cover the material and labour expenses of collective and state farms in raising these products, but also provide a margin for accumulation for expanding reproduction, and for a substantial increase in the incomes, both in cash and kind, of collective farms and farmers".[41]

It is difficult to over-emphasize the change in policy which has been accomplished in the last three years. Whereas before 1953 procurement prices were not intended to cover costs, so that the incentive to efficiency was the purely negative one of wishing to minimize losses, now, it seems, they provide a positive encouragement to good farming.

Eastern Europe

In contradistinction to the Soviet Union, most countries of eastern Europe have continued to carry out increases in real wages through retail price cuts. At the end of December the prices of clothing and certain other manufactured consumer goods were reduced in Rumania.[42] In February the Bulgarian Government cut the prices of foodstuffs, textiles and footwear, and as a result the retail price index fell by perhaps one-tenth. In Czechoslovakia a comprehensive price reduction introduced on 1 April brought food prices down by 6 per cent and clothing prices by 9 per cent [43] (see Table 13). Durable consumer goods and pharmaceutical products were also reduced in price (though lignite prices had earlier been raised by 6 per cent). On balance the cost of living was reduced by 5 per cent.[44] At the end of April substantial price reductions were announced in Hungary and Albania. In Hungary the prices of household goods, textiles and clothing were reduced by proportions ranging from 6 per cent for knitted goods to up to 40 per cent for nylon goods. The only foods affected were dairy products and restaurant meals. Over all, the price reductions are estimated to amount to about 3 per cent. The Albanian reductions followed the unification in January of ration and free market prices of textiles and footwear when rationing of these goods was lifted: the cuts were ascribed to reductions in costs. Some small reductions affecting consumer durables were made during April in Poland.

Meanwhile, wage adjustments were undertaken in several countries. Some of these were on the lines hitherto conventional in post-war eastern Europe—i.e., steepening the already sharp differentials within the wage-structure—while others, even in the same country, paid specific attention to the lower income groups. Thus, in Czechoslovakia, miners' wages have been raised (last year the basic wage was increased; this year incentive premia have been improved); but on the other hand some of those whose relative position has deteriorated in recent years—transport workers and medical, teaching and research personnel—have been granted increases. The object of the wage reform now in progress in eastern Germany is a reversion to the originally conceived wage spread. Slacker norm-fixing in some industries had raised earnings as fast as productivity had increased, while more tightly conceived norms in equal priority

TABLE 13

Cost of living in Czechoslovakia [a]

June 1953 = 100

	1953 October	1954 April	1955 April	1956 April	Proportion of expenditure on the family budget used in the calculation at April 1956 prices
Food	96	89	89	84	66
Clothing	89	73	69	63	11
Heat and light .	98	94	92	91	4
Rent	100	100	100	100	4
Other goods and services	93	93	90	90	15
Total . . .	95	88	87	83	100

Sources: Statistický Obzor, No. 9, 1953 No. 4, 1954, *Rudé Právo*, 13 and 18 December 1953, 31 March, 1 April 1954, 31 March 1, 2 and 3 April 1955, 31 March and 1 April 1956.

[a] The 99 commodities covered by this cost-of-living index, together with their weights in the base year, are listed in Table LV, A, of the *Economic Survey of Europe in 1953*. Some revisions have been made to the figures published there and in Table 17 of the *Economic Bulletin for Europe*, Vol. 7, No. 1, in the light of new information published in *Rudé Právo*, 1 April 1956. The clothing index still remains subject to greater error than the other indices because of the difficulty of making adequate allowance for the significant changes in the quality of goods.

[41] *Pravda*, 8 April 1956. Some tax element still remains. Thus, the Minister of Finance, discussing the 1956 Budget in the Gosplan journal, stated that "collective farms pay over part of their revenue to the State in the form of income tax and also to a certain extent through the system of procurement prices" (*Planovoe Khozyaistvo*, No. 1, 1956, p. 24).

[42] The combined saving on account of this and the preceding reduction (in August) was officially estimated at 0.6 billion lei in a full year: the retail turnover in 1955 was, for comparison, 28 billion lei.

[43] This may represent an over-estimate of the fall in average clothing prices as the cuts were limited to certain narrowly defined brands of clothing, stocks of which are known to have accumulated.

[44] The estimate of a 5 per cent fall was obtained by applying the new prices to the basket of 99 goods and services used to prepare Table LV in the SURVEY for 1953. The 6 per cent decline shown since December 1954 (cf. Table 13) agrees precisely with the official estimates of a rise in the real wage index of 10 per cent, of which 3 points were due to the increase in money earnings.

TABLE 14

Average gross monthly earnings of employed persons in Poland

	1949		1955		
	Zloty	Percentage of average for the socialist economy	Zloty	Percentage of average for the socialist economy	Percentage of 1949 earnings
Total socialist economy	466	100	1 114	100	239
Of which :					
Coal	680	146	1 716	154	252
Metallurgy	552	118	1 506	135	273
Engineering	500	107	1 291	116	258
Food processing	518	111	997	89	192
Textiles	465	100	905	81	195
Building and construction	435	93	1 338	120	308
Transport and communications	434	93	1 088	98	251
Health	395	85	756	68	205
Education			853	77	
State administration	424	91	1 010	91	238

Sources : Trybuna Ludu, 3 February and 8 April 1956, *Nowe Drogi*, No. 2, 1956.

sectors had induced a smaller wage rise. The balance has been redressed by raising norms in the industries where the rise in earnings was considered excessive. A revision of social insurance contributions announced with the 1956 Budget left unchanged those paid by wage earners but almost tripled those of peasants and raised those of artisans by 70 per cent: for each of these groups benefits paid out had been in excess of premium income.[45]

In Poland, Hungary and Bulgaria recent changes have been of the same nature as the new Soviet policy favouring the lower paid worker. By 1955 the Polish wage structure had become highly differentiated. It will be seen from Table 14, illustrating the changes in average earnings between 1949 and 1955, that wage-earners in four industries: coal, metals, engineering and construction—accounting for about one-fifth of total employment—had considerably improved their relative positions. Average wages in the consumer-goods industries were 10 to 20 per cent below the average 1955 monthly wage of 1,100 zloty and in the health services as much as one-third below. In the health services, for example, in September last year 24 per cent of employees earned less than 500 zloty and a mere 18 per cent more than 1,000, whereas in coal mining, the most favoured trade, two-thirds earned more than this sum. In all, several hundreds of thousands of workers were reported to be earning less than 500 zloty. During the six years 1949 to 1955 average money wages in Poland increased by 130 per cent and the official retail price index by 80 per cent. The increase of 28 per cent in net wages implied by the comparison of these two figures and quoted in the SURVEY for 1955 [46] is, however, certainly too high, as has been pointed out by several speakers in the 1956 budget debate in the Polish Parliament, because of the inappropriateness, for the calculation of urban wages, of an index of retail prices over-weighted with manufactured goods.[47] A rough calculation of the increase in the cost of purchasing the fixed basket of goods and services covered by the cost-of-living index which was in use until 1949 gives a percentage increase of 130 per cent—i.e., about equal to the rise in average real wages. But this too may be wide of the truth, if only because of the not very satisfactory nature of the basket. Nevertheless, the conclusion can hardly be avoided that real wages in the less favoured branches appear to have fallen not only relatively but absolutely.

The principal remedial measures so far adopted have been the raising in April of all salaries below 500 zloty a month and the exemption of salaries below 551 zloty from income tax. Pensions at the lower end

[45] For peasants a continued but smaller subsidy is envisaged.

[46] See Table 84.

[47] As goods bought by farmers rose less in price than other commodities, the index under-states the rise in the urban cost of living.

of the scale were increased at the same time.[48] It is estimated that of the 6.5 million persons employed in socialized enterprises and government services, 3.4 million will benefit from the improved wage scales. Inequalities within industries resulting from too great a reliance on incentive premia were also reduced: in construction, for example, the share of fulfilment premia in total earnings was decreased from 40 to 15 per cent.[49]

A speech by Mr. Rakosi, First Secretary of the Hungarian Workers' Party, on his return from the Soviet Party Congress, indicated that Hungary is to follow somewhat similar wage policies during the year. Average real wages are planned to increase by 3.3 per cent during 1956, of which about one-third will arise from the price reductions already mentioned: the rest of the benefit is mainly to go to lower-paid workers through wage increases. An improved old-age pension scheme, higher salaries for teachers and larger expenditure on the health service are planned: in aggregate they raise expenditure on social and cultural measures in the 1956 Budget by 6 per cent.

The 1956 Budget of Bulgaria provides 260 million leva for raising the salaries of teachers, medical personnel and others.

In eastern Europe, as in the Soviet Union, there are signs that governments seem to consider that the increases in farm incomes have gone far enough. Indications that further income increases must come *pari passu* with output expansion were explicitly made in an official statement on the 1956 plan as regards Hungary and implicitly by the exclusion of producer goods bought by farmers from the February price reductions in Bulgaria. In Poland the increase in procurement prices for livestock at the end of last year, the reduction in MTS charges and a small cut in the agricultural tax will make for a somewhat more rapid income rise.

[48] E.g., old-age pensions of 160 to 280 zloty per month and widows' pensions of 110 to 180 zloty per month.

[49] The opportunity of these revisions was taken to eliminate certain anomalies in the wage structure—e.g., building foremen, who had previously earned less than skilled labourers, enjoyed a 30 per cent wage increase. In all, 45 per cent of building workers had a wage rise.

7. Agriculture and Industry in the Soviet Union and Eastern Europe

Policy towards Collective Farms

The first moves in a new drive towards the socialization of agriculture were made in the latter months of last year.[50] In the first quarter of 1956 the new policy gathered momentum.

In the Soviet Union the objective is the intensification of operations on collective fields and stock at the expense of the private plots and animals possessed by each member household. If in the first agricultural reforms of 1953 the Government made concessions on the tillage of private plots in the interests of an early expansion of meat, dairy and vegetable output, more recent policy has turned to the discouragement of private, and the encouragement of communal, farming. The most important element so far in the new measures is the decree of 10 March recommending amendments to collective farms statutes: one of these amendments would permit farms to vary the size of the personal plot directly with the labour-days contributed by the household in communal operations. The decree lays down that the adjustment of plots to the communal contribution must involve decreases and not increases in the size of plot. The ceilings for private livestock ownership are also to be reduced. The decree indirectly admits that the new measures may cause a reduction in farmers' earnings but claims this as temporary as "in the long run collective farmers will receive considerably larger incomes since the land transferred to communal tillage, being farmed by MTS with higher technique and mechanization, will be incomparably more remunerative". A decree of 10 March ratified previous official recommendations that collective farms should pay monthly advances to members for their communal work rather than wait until after the harvests, and that direct incentives should be created by the allocation of specific fields or stock to members and by the offer of premia related to the produce raised. Other measures for making collective farming more attractive have as object better supplies of selected seeds, the payment of workers employed in farm building from the investment funds of the collective rather than as labour-days,[51] and various steps towards raising the efficiency of MTS.[52]

The campaign to bring individual farmers of eastern Europe into co-operative farms has been pressed

[50] See Survey for 1955: p. 194 for the Soviet Union and pp. 195-197 for eastern Europe.

[51] I.e., thereby leaving more income to be distributed for farm members' labour-days in agricultural work, since the allocation to investment funds is a fixed share of income.

[52] Viz. the amalgamation of small MTS and the revision of regional norms (with margins of variation at the discretion of the MTS). For the financial incentives for MTS introduced in 1956, see Survey for 1955, p. 194.

particularly energetically in Bulgaria.[53] During the first quarter of the year no fewer than 282,000 peasant households joined co-operatives, thereby raising the proportion of land collectively farmed to 75 per cent. This is the more noteworthy as the number of households in collective farms had been stationary for several years—there were 538,000 at the end of 1950 and 586,000 last summer. During the whole of 1955 there were only 27,700 new entries. Yet within the space of three months more than half the hitherto independent farm households joined collectives.

All the new Bulgarian co-operative farms are, moreover, of the integrated type whereby the land is tilled as a single unit. The same is true of Czechoslovakia, where most of the 1,170 new co-operative farms founded between January and mid-April of this year (representing an addition of a sixth to the total number) are of the more integrated types designed to save manpower. Nevertheless, in the current year it has still been found necessary to plan for an increase in the number of persons engaged in agriculture of 74,000 in 1956, in spite of the existing shortage of labour in industry as well as in building, where the number of unfilled vacancies has increased in each of the past two years. In the other countries of eastern Europe governments have been encouraging simpler forms of co-operation as a stage towards collectivization. In Poland the share of these loose forms of co-operative, in which labour and equipment are pooled only at the peak of the season, has in recent years been insignificant. An article in the organ of the Polish Workers' Party[54] has, however, recently pointed out that peasants are suspicious of attempts to force them into collectives or even to accept credits and that " they wish to learn the truth about the new type of farming by themselves, starting from the lowest types of co-operatives." New tariffs introduced this year on Polish MTS chiefly favour collective farms (of all types), although small concessions are made to private farmers.

The same policy of encouraging the less integrated types of farm was begun at the end of last year in eastern Germany, where much effort continues to be devoted to attracting the richer peasants into co-operatives. In Albania a resolution of the Workers' Party has recommended that integrated collective farms should be encouraged only in the lowland littoral and that in the mountain areas peasants should be influenced towards the looser farm collectives. Officials are rebuked, in the same Party resolution, for having made specious promises to peasants to attract them into co-operatives. In the first two and a half months of the year 200 co-operatives (of both types) were founded, bringing the total to 500 or 2½ times the number last summer. The share of arable land cultivated by co-operatives had risen by mid-March to 17.2 per cent compared with 9.3 per cent at the beginning of last year. In Rumania the policy of active encouragement to the simplest forms of co-operation (joint tilling associations and ad hoc pools) is already nearly two years old: these simple groupings have formed the bulk of the new collectives since created.

Agricultural Supplies

The Soviet Ministry of Agriculture has accounted the remarkable improvement in supplies of milk and pork during the past winter as the first success of the maize campaign. On 1 March 1956 collective farms were fattening three times as many pigs for market as at the same date last year; Ukrainian pork production, for example, is forecast at triple 1955 output. The milk output of collective farms in the first seven months of the agricultural year (October 1955 to April 1956) was no less than 59 per cent higher than in the same period of 1954/55 over the country as a whole and nearly double in the Ukraine.

These rises are ascribed to substantially larger fodder supplies—collective farm silage was 17 million tons greater in 1955 than in 1954, of which over 6 million tons were maize cobs. The Ukrainian Minister of Agriculture stated at the All-Union Conference on Maize (held at the new Maize Research Institute, Dnepropetrovsk, in March) that because 22 per cent of the Republic's grain area was sown to maize in 1955, Ukrainian pork deliveries in January and February had been two and a half times that of the same months in 1955. In its April statement addressed to farmers, the Government reiterated its belief in the need for a rapid expansion of maize output, but admitted that on some farms maize yields had been very low or even zero and commented that it was not unmindful of the value of other grain. Better results, the statement continued, could be obtained with hybrid maize seeds. Mr. Lobanov, at that time Deputy Chairman of the Council of Ministers,[55]

[53] The reduction of non-consumption outlays in the plan for 1956, noted above, may be intended to ensure satisfactory supplies of consumer goods during the settling-in period of the new collective farm members.

[54] *Trybuna Ludu*, 6 April 1956.

[55] Mr. Lobanov was subsequently transferred to the directorship of the All-Union Agricultural Institute in succession to Academician Lysenko. The appointment of so senior an agricultural administrator (he was for many years a Deputy Minister of Agriculture and was made Deputy Premier in March 1955) promises an improvement in agricultural research. The present Minister of Agriculture becomes Deputy Premier.

speaking at the All-Union Maize Conference, stated that hybrid maize seed raised yields by 25 to 30 per cent, but that it was sown over only a very small area, a situation ascribed by the Director of the Maize Institute to inadequate domestic seed production. Additional supplies of hybrid seed were being imported from the United States and Canada, but this was not to be regarded as normal. In the RSFSR, therefore, 169 state farms were to be set up this year to grow hybrid maize seeds, and the area sown to maize is further to expand.[56]

Despite the already substantial increase in milk output, a plan was announced in mid-February for doubling supplies to towns during the next two years. The increment is mostly to be derived from the higher output which better feeding is expected to continue to bring, but is partly a re-allocation of distribution: the Ministry of the Meat and Dairy Industry is ordered to reserve 55 per cent of its milk and 50 per cent of its cream for the Ministry of Domestic Trade. Above-plan milk procurement is moreover to be sold chiefly as fresh milk and not sent for processing into tinned milk, butter, cheese, etc.

The sugar beet area is also down for further expansion this spring: in the Ukraine, the largest producing area,[57] an additional 188,000 hectares are to be sown and the republic's total crop is expected to be 25.1 million tons, against 21.75 million tons last year.

Throughout eastern Europe the long and extraordinarily hard winter retarded spring sowing somewhat but the heavy snow cover reduced the danger of frost damage to autumn sown crops: in 1953/54 the absence of this snow cover was catastrophic during the late hard frosts. In Hungary there were floods on the Danube but only 1 per cent of the crop area was affected.

Despite a shortfall in potato supplies, the fodder situation, and hence the output of livestock produce, was considerably better in the earlier months of the year. Only in eastern Germany, which relies particularly upon potatoes and root crops for its fodder supplies,[58] was the situation bad. In Hungary a considerable improvement in first-quarter meat supplies was accompanied by falls (compared with the first quarter of 1955) in poultry, milk and egg deliveries. The Czechoslovak under-fulfilment of first-quarter procurement plans for some livestock produce is on the other hand attributed in official quarters[59] to the speculative withholding of supplies in anticipation of later selling at free market prices. The plans for beef and eggs were under-fulfilled, but those for pork and milk were exceeded. Yields of grains and roots were better last year, but the potato crop was only slightly larger. This experience has confirmed the Czechoslovak authorities in their desire to diversify the fodder base, and in the 1956 spring sowing plan the increase in the area sown to maize is to be more than double the over-all expansion of the sown area. The bulk of the increment in arable area is to be in the border zone, the cultivation of which has been a chronic problem since the war.

In every country for which statistics are available (cf. Table 15) the yields obtained by co-operative farms were greater than those of private farmers. This reflects in the main preferential and therefore more intensive use of fertilizer, selected seeds and MTS equipment. So far as small grain is concerned, the yield increases over the preceding year were larger on the co-operatives in Albania, Hungary and eastern Germany. The proportionate fall in root yields in the latter country were, however, worse for co-operatives than for private farms largely as a consequence of the lack of hired labour at harvest time.

Industry and Trade

The directives on the Soviet Sixth Five-year Plan approved in February require a considerable expansion of Siberian industry, and to encourage the flow of manpower to the new industrial sites a conference of young builders was held in Moscow in April. Addressing the conference, Mr. Khrushchev pointed out that employment opportunities in the large European cities of the USSR were limited by the prohibition of new factory construction (he specified Moscow, Leningrad, Kharkov, Kiev, Sverdlovsk and Odessa as coming under this ban).[60] He called for an exodus of 300,000 to 500,000 young workers to Siberia. This statement was amplified by a Gosplan official writing on the housing programme for the eastern regions under the five-year plan.[61] He estimated that almost 3 million additional workers would be required in those areas and that only 20 to 30 per cent of them could be locally recruited—i.e., implying a migration

[56] E.g. by one million ha. each in the Ukraine (bringing the total sown to maize to over 7 million ha.) and in Kazakhstan (bringing the total to 1.7 million ha.). The area in Moldavia, the Kuban, Byelorussia and the central black-earth region is also to increase considerably.

[57] In 1955 71 per cent of the country's sugar was produced in Ukrainian refineries.

[58] In the Soviet Union the potato crop was also bad—20 per cent below the level of 1950 despite a 7 per cent larger area—but roots form a mere twentieth part of fodder consumption.

[59] Cf. *Rudé Právo*, 24 March 1956.

[60] During the period of the Fifth Five-year Plan, although the ban on the expansion of Moscow was in force, employment in Moscow industry increased by no less than 21 per cent.

[61] *Stroitelnaya Gazeta*, 1 April 1956.

TABLE 15

Crop yields in eastern Europe [a]

Quintals per hectare

	State farms		Collective farms		Private farms		All farms	
	1954	1955	1954 [b]	1955 [b]	1954	1955	1954	1955
Albania								
Wheat	..	..	12.5	12.9	10.1	10.0	10.4	10.3
Rye	..	..	..	..	..	..	..	9.1
Barley	..	..	..	..	..	..	..	9.3
Oats	..	..	..	..	..	..	..	8.6
Maize	..	..	12.2	16.4	10.0	14.2	10.1	14.3
Sugar beet	..	..	(94)	223	..	110	..	181
Czechoslovakia								
Wheat	..	..	16.8	(12)	16.2	..	..	..
Rye	..	..	16.9	(11)	16.2	..	..	..
Barley	..	..	19.6	(12)	17.8	..	..	..
Maize	..	..	..	..	..	..	..	26.2
Sugar beet	..	..	308.5	333.2	289.4	314.3	..	..
Eastern Germany								
Wheat . . Autumn	28.5	34.9	26.3	33.9	26.9	32.5	27.0	32.6
Spring	29.4	28.5	27.4	27.4	26.4	27.1	26.6	27.2
Rye . . . Autumn	23.9	25.0	21.2	23.1	21.2	23.0	21.3	23.1
Barley . . Autumn	26.3	34.9	24.7	33.8	24.6	33.5	24.8	33.6
Spring	27.5	28.9	25.9	27.4	25.8	27.3	25.9	27.4
Oats	27.1	30.8	24.3	28.1	23.9	27.3	24.0	27.5
All grain	26.0	29.5	23.6	26.9	23.2	26.2	23.3	26.4
Sugar beet	..	..	..	..	..	..	339.5	286.1
Fodder roots	522.0	439.6	500.3	425.7	510.2	470.0	510.6	469.0
Potatoes	..	..	..	..	..	..	200.9	143.6
Hungary								
Wheat	11.7	20.2	10.8	19.4	12.0	14.6	11.3 *	15.6 *
Rye	..	16.0	10.1	14.6	10.3	11.7	10.3 *	12.2 *
Barley	..	22.5	13.0	20.5	14.6	18.8	14.1 *	19.8 *
Maize	..	22.6	..	23.5	..	22.4	22.6	23.0 *
Potatoes	..	127.1	..	119.8	..	105.2	92.1	111.3
Poland								
Wheat	..	..	..	..	..	..	12.8	14.8
Rye	..	..	..	..	..	..	12.2	14.1
Barley	..	..	..	..	..	..	12.9	15.0
Oats	..	..	..	..	..	..	12.7	14.0
Sugar beet	..	..	..	..	..	..	183	186
Potatoes	..	..	..	..	..	..	135	100
Flax	..	..	..	..	..	..	28.6	29.9

Sources: **Albania:** *Rruge e Partis*, Nos. 4 and 5, 1955, *Zeri i Popullit*, 29 October 1954 and direct communication by the Albanian Government; **Czechoslovakia:** *Planované Hospodářstvi*, No. 4, 1955 and *Rudé Právo*, 6 and 9 February 1956; **Eastern Germany:** *Statistische Praxis*, No. 4, 1956; **Hungary:** Plan fulfilment reports; *Szabad Nép*, 3 October 1955; *Statiszikai Szemle*, No. 1, 1956, pp. 2-3, No. 3, 1956, pp. 199-201; *Közgazdasági Szemle*, No. 9, 1955, pp. 1015-1016; **Poland:** direct communication by the Polish Government.

a Official data unadjusted for differences of definition between countries.

b The figures in parentheses are the percentage excess of average yields compared with those on private farms.

of some 2¼ million workers, or perhaps up to 5 million persons in all.[62]

[62] Allowing no dependants for the young persons expected to move, but the average dependency ratio for the remaining workers.

Few details have been published on 1956 industrial targets. Production of motor-cars is to be unchanged at the previous year's level despite the 86 per cent increase envisaged in the 1956-1960 period. Lorry production, which is to grow by 32 per cent over the

five years, is set for a 10 per cent rise in 1956. The new coal-mines to begin operation this year are to have three times the capacity of the new openings of 1955. On 22 March an editorial in *Izvestia* called for accelerated completion of textile mills: it stated that a cotton mill in Kalinin had been under construction for 14 years and was still only half completed, and that of the 44 new clothing factories started in 1954 not one had been commissioned.

While the priority of producer goods in investment allocation and industrial expansion continues to be stressed in official pronouncements, a number of measures involving supplementary capital expenditure on consumer trades were published during the quarter. They all, however, involve relatively small amounts of capital, although the return in terms of consumer welfare is considerable.

A decree of 13 March introduces a plan for an expansion of the network of public catering establishments. The revised 1956 Plan (5,000 new openings) is not much larger than the plan originally announced last September (4,625),[63] but a considerable volume of re-equipment in existing establishments is to be undertaken. All factory canteens and restaurants serving meals in the lower price ranges are to be turned over to self-service and to be re-stocked with washable tables (to replace the need for table-cloths).[64] The additional funds for these investments are to come from the enterprise's fund [65] of the respective factory in the case of canteens and from the above-plan revenue of the republics in the case of public restaurants.

The decrees on vegetable and milk production [66] contained supplementary plans for shop construction, and for the transformation of 3,000 shops into self-service shops. In aggregate the capital cost is small, but even a small addition to the all too few retail outlets brings a marked benefit. In March the head of the Wholesale Department of the Ministry of Domestic Trade complained of the low proportion of packaged goods in retail sales.[67] He quoted the 1955 proportions, which varied from 2 to 3 per cent for meat and macaroni to 9 to 10 per cent for salt and lump sugar; granulated sugar, buckwheat, starch, etc., were never sold in packages. In the 1956 Plan only " miserable quantities " were to be packaged and for at least one item (confectionery) 10 per cent less was to be packaged in the first quarter of 1956 than in the preceding quarter.

Statements on plan results in the first quarter have been published in Czechoslovakia, Hungary and Bulgaria, all reporting the over-fulfilment of the global industrial output plans. The 1.3 per cent net over-fulfilment in Czechoslovakia was the result of a continuation of above-target production in coal mining [68] and electricity generation and shortfalls in metallurgy and especially in construction. Similarly, in Hungary, where the global plan was exceeded by 1.7 per cent in nationalized and co-operative industry, the coal and electricity plans were over-fulfilled; but building fell behind. The Bulgarian industrial plan was exceeded by 0–2 per cent, with over-fulfilment in the electricity, light and food industries, and a shortfall in building. In eastern, as in western, Europe, the extremely hard winter did not have as serious consequences as were at the time feared: only the building industry was significantly affected, and the fuel and energy industries managed to increase supplies somewhat.

[63] There were 115,000 catering establishments in operation at the beginning of last year, and a September estimate of new openings in 1955 was 4,000.

[64] Orders have been placed for 1.1 million tables for delivery in 1956 and 1957.

[65] For definition see SURVEY for 1955, p. 213.

[66] Cf. p. 28.

[67] *Sovetskaya Torgovlya*, 15 March 1956.

[68] Coal output per man-shift is, however, still below the pre-war level.

INPUT-OUTPUT TABLES: RECENT EXPERIENCE IN WESTERN EUROPE

The following article had its origin in a paper prepared by the secretariat with the assistance of an expert consultant, Mr. Odd Aukrust, of the Norwegian Central Statistics Bureau, for the use of a working group of the Conference of European Statisticians. The group also had before it memoranda from national statistical offices describing current input-output work in various countries, as well as a more theoretical paper submitted by Professor J. R. N. Stone and dealing in particular with the formal relationships between input-output tables and national accounts. The secretariat's paper was intended to serve mainly as the agenda for an exchange of views and experience between government statistical offices, some already active in the field of input-output work and others considering entering the field. The Conference suggested that a revised version should be prepared for wider circulation. Although in preparing this article for publication the structure of the paper has been somewhat changed, no attempt has been made to transcend the limitations set by the restricted purpose it was originally intended to fulfil.

1. Introduction

The classic text of input-output theory and practice is of course Leontief's book *The Structure of American Economy, 1919-1929*, the first edition of which was published in 1941. This book was the first attempt by an economist to construct a model of the general equilibrium, explicitly on Walrasian lines, of an actual economy whose relationships were spelt out in figures. In the process of fitting figures into the model the author was driven to construct a *tableau économique* of the United States economy, which showed estimates of the commodity flows amongst the 43 sectors into which he chose to partition the economy. The book thus had a twofold interest—as an exceptionally bold piece of model-building, and as a statistical *tour de force*.

In subsequent work in the new field discovered by Leontief there has been a greater division of labour. On the one hand, a great deal of work has been done, mainly in the United States, in refining the original Leontief model almost out of recognition and in fitting into the more refined models data collected by non-statistical methods. On the other, a number of statisticians, in the United States and elsewhere, have compiled *tableaux économiques*, or—to use a more modern jargon—input-output tables, of varying degrees of complexity, often without too much concern about the type of model of the economy which their form presupposed.

In the United States the first input-output tables were constructed more or less independently of the national accounts, which were simultaneously being improved in both logic and accuracy. In Europe input-output work has usually developed more or less as a by-product of work on national accounting, and the question which now faces national statistical offices—in which nowadays all basic work on national accounts is centred—is how far it is worth developing this work in the interests of more informed policy decisions or more consistent statistics. On this question opinions are known to differ rather widely. And even in those countries where input-output work is being pushed on rather intensively, there is by no means unanimity as to the purposes which it can serve, or, therefore, about the systems of classification which should be adopted. There is not even any internationally agreed glossary of technical terms, and, indeed, it is probably too early to search for any standardization of terminology.

2. General Input-output Models

The Original Closed Model of Leontief

The theoretical model originally constructed by Leontief was a static general equilibrium model (that is, one in which the effects of capital formation and changes in technique were neglected) which involved a number of drastically simplifying assumptions, of which the following were the most important:

(1) That the economy could be partitioned into a number of sectors, or " industries ", each of which had a homogeneous output;

(2) That the coefficients relating particular inputs into a sector (of labour as well as materials) to that sector's total output were fixed by the level of technique and not affected by changes in relative prices or in the scale of output;

(3) That there was only one scarce resource, labour, or, in other words, that capacity limitations cannot arise within the ranges of output that the analysis is supposed to cover;

(4) That households and government form a sector like any other, that is, an " industry ", whose " output ", valued at current prices, is equal to wages and profits, and whose " inputs ", determined by fixed input-output coefficients—or put another way, by unit income elasticities of demand (and zero price elasticities)—are household and government expenditures on this and that; and

(5) That one of the sectors of the economy is an " industry " called foreign trade, whose output is imports and whose inputs (again determined by fixed coefficients) are exports.

On these assumptions Leontief was able to construct a model in which the output, valued at current prices, of each sector, or industry, would be expressed in terms of the output of every other sector. Given n sectors, each with a single output, there would be n equations and n unknowns (the outputs)—i.e., the system was completely determinate [1]—too determinate, indeed, for the model to be of much practical use for any policy-maker.

The method Leontief used to put flesh on to the bones of his model was to construct a table showing the commodity flows (valued at current prices) between the 43 sectors [2] into which he partitioned the United States economy in 1919 and 1929, arranged in the form of a matrix of transactions where the cells in the column for each sector represented inputs into that sector (purchases) classified by sector of origin and the cells in the row for each sector represented the output of that sector (sales) classified by sectors of destination.[3] From this transaction matrix, or input-output table, input coefficients could be computed by dividing each cell in a particular sector's column by the row total (total output) for the sector. Thus from the original flow matrix a corresponding matrix of input coefficients could be derived,[4] which (on the given assumptions) contained everything worth knowing about the production structure of the economy.

It must be emphasized that it was only because of the assumption of fixed input coefficients that Leontief was able to move from the original flow table to his coefficient matrix.

Open Static Models

It is not worth dilating on the extremely rigorous nature of the assumptions underlying this closed model, because all subsequent work, both by Leontief and others, has been in terms of what are usually now called open models—that is, models in which the number of structural equations is less than the number of unknowns to be determined. Formally a closed model can be converted into an open model by freeing any of the variables from structural constraints. For example, the total output of industries such as agriculture or hydro-electricity could be taken as given. In fact, in Leontief's own variant of the open model, as in those of most others, it is, not surprisingly, the constituents of final demand which are made exogenous to the system. Assumption (4) of those listed above is thus removed, and the pattern of final demand—the " final bill of goods " in the jargon of the subject—is left free to be determined by the play of elasticities, propensities or policy decisions.

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[1] For a convenient, though critical, statement of the form of the equations see Burgess Cameron, " The Construction of the Leontief System ", *Review of Economic Studies*, Vol. XIX (1), No. 48, pp. 19-27.

[2] The household and government sector was in fact further subdivided, but this was not essential for the purposes of the model.

[3] This arrangement of the data is now conventional in all input-output tables.

[4] In fact Leontief consolidated his original 43 sectors into 10 sectors before deriving the matrix of coefficients, but this was only because of computational difficulties which the development of electronic computers capable of solving large sets of simultaneous equations very quickly has since eliminated.

In some variants of the model assumption (5)—the identification of foreigners' exports from the economy with the output of an "industry" whose inputs are the economy's exports—is also dropped.[5] Both these changes imply making a distinction, unnecessary in a closed model, between sectors the pattern of whose purchases is determined by technical factors as well as by the volume of their sales—which will be called, indifferently, *productive sectors* or *industries*, in what follows—and the so-called *autonomous sectors*.

The structural equations relating the productive sectors can thus be used to determine the values of each industry's gross output only if some additional assumptions, external to the model, are made about the structure of purchases of the autonomous sectors (the final bill of goods), which in turn may of course be the result of assumptions about the size and structure of income of the autonomous sectors.

The input-output table, or flow matrix, for any year which corresponds to this model thus consists of two parts: a square matrix of inter-industry flows of commodities and a border of rows and columns (not necessarily equal in number) in which are recorded the receipts and payments (or receivables and payables) of the autonomous sectors. Because the assumption of fixed coefficients has been retained for the productive sectors it is still possible to obtain a matrix of input coefficients corresponding to the square matrix of flows by the same method as before—by dividing each column cell in the square matrix by the row total—and these coefficients can be used, without any further transformation, to calculate the gross output of each industry for any chosen combination of final demands. If, however, the number of structural equations is large, which is usually the case in input-output analysis, the amount of computation needed to derive a solution may be considerable. Thus, if it is likely that the same system of equations will have to be solved over and over again, for different sets of values for the exogenous variables, it may well be worth while to obtain a general solution—that is, to transform the system of equations in such a way that each unknown is directly expressed as a function of the exogenous variables only. The system of equations of the usual open input-output model is especially suitable for such a transformation, because all the equations are linear and the matrix of structural coefficients is square.[6] The operation can be handled with ease, even for quite large matrices, by modern electronic computers, and it has been demonstrated in more than one country that the same result can be obtained, though in a matter of weeks rather than minutes, by quite small teams using normal desk computers. It is, moreover, the common experience that the cost of the operation is among the least of the costs of input-output work,[7] and it seems that it has been performed, though the inverse matrix has not always been published, in all the cases where an input-output table has been constructed.

But it must be emphasized that it is *necessary* to invert a matrix, by one means or another, only if a general solution is desired for the system of equations of an open model in which linearity is assumed, as in most input-output models of which European statistical offices, at least, so far have experience. If the assumption of linearity is dropped, the matrix cannot be inverted. If the assumption of linearity is retained, but the investigator is interested only in finding solutions to particular problems, he can proceed straight from the ordinary system of structural equations, without transforming them further.

Quantity Analysis

As was explained above, the commonest type of input-output model is a static model in which the components of final demand are treated as exogenous variables. And the commonest type of problem put to the income-output analyst is to calculate how the pattern of production, the volume of imports and the employment of labour would have to change in order to make possible the satisfaction of a particular hypothetical "final bill of goods"—that is, a particular set of *quantities* of goods and services delivered

[5] The most appropriate treatment of foreign trade is obviously not the same for all countries: it is, however, more important to have a plausible treatment in most European countries than it is in the case of the United States economy.

[6] The identities represented by the productive sectors' rows in the original transaction matrix can be written as follows:

$$X_{11} + X_{12} + \ldots + X_{1n} + Y_1 = X_1$$
$$X_{21} + X_{22} + \ldots + X_{2n} + Y_2 = X_2$$
$$\ldots\ldots\ldots\ldots\ldots\ldots$$
$$X_{n1} + X_{n2} + \ldots + X_{nn} + Y_n = X_n,$$

where X_i is the total output of productive sector i, X_{ij} that part of it which is sold to productive sector j and Y_j that part of it sold to autonomous sectors.

Putting $a_{ij} = X_{ij}/X_j$, we get

$$a_{11}X_1 + a_{12}X_2 + \ldots + a_{1n}X_n + Y_1 = X_1$$
$$a_{21}X_1 + a_{22}X_2 + \ldots + a_{2n}X_n + Y_2 = X_2$$
$$\ldots\ldots\ldots\ldots\ldots\ldots$$
$$a_{n1}X_1 + a_{n2}X_2 + \ldots + a_{nn}X_n + Y_n = X_n$$

or, in the matrix notation usually employed,

$$AX + Y = X, \text{ or } (I - A)X = Y.$$

To find a general solution the matrix $(I - A)$ has to be inverted, so that we get $X = (I - A)^{-1}Y$

[7] It would, however, probably be unduly optimistic to expect that private manufacturers of electronic computers will continue indefinitely to be willing to invert input-output matrices free of charge, as appears to have been the case so far in some countries.

to final buyers. In so far as he is merely an input-output analyst he must assume, of course, that the difference between the hypothetical bill of goods and the existing one or the one ruling in some base-year already takes account of all the multiplier effects of initial changes in one component of final demand on the others.

In the real world, doubtless, the question is not put quite like this. It is much more likely that the statisticians will be invited to assume a certain change in the total volume of government expenditure, exports or investment, and to work out the consequences. In that case it will first be necessary to distribute this increase over the various products, and only then will it be possible to use the matrix of input coefficients to calculate the effects on the total output of each industry and on total employment and income. At this stage there is an estimate of the secondary effects (via income) on final demand of the initial increase. Once this secondary change has been distributed (most crudely by assuming proportionality, otherwise by using estimates of elasticities, or "hurdles") over the various products on which it is likely to be spent, it is time to get back to input-output analysis proper, in this instance applied to the secondary change.

It is not suggested here that there can be no specialization in official research. The example, however, does bring home the necessity for there being very close links between those experimenting with general models, those working on national accounts, those estimating demand equations for particular final goods and those engaged on input-output analysis. It is not by chance that it is in Norway and the Netherlands, where these links are exceptionally close, that the most thorough applications of input-output technique have been made within the broader framework of so-called decision models.

Price Analysis

In what has been said so far it has been assumed that prices remain constant and that only quantities (the volume of inputs and outputs) vary. The assumption can be reversed, and an open input-output model constructed in which the real structure of production is taken as given and prices are allowed to vary. The exogenous variables can then become, for example, import prices and the various constituents of the value added in different industries (wages, net indirect taxes and gross profits), and the endogenous variables are the prices of the material inputs and outputs.

On this basis it is possible to estimate what price changes will result, other things being equal, from given changes in the price determinants (import prices, factor prices and indirect taxes).[8] For instance, it may sometimes be of great importance to know how the price of an important export commodity, or the cost-of-living index, might be affected by a general increase in money wages. The incidence of indirect taxes is also a subject that can be investigated by this technique. In general it is a great convenience to have ready at hand exact knowledge of what have been called in the Netherlands the "cumulative cost quotas" of various commodities—that is, the *direct and indirect* content of wages, profits, imports and taxes in each price. In Denmark the usefulness of this technique for obtaining estimates of the "terms of trade" between manufacturing and agriculture is stressed.

Regional Analysis

For completeness it should be mentioned that the technique of input-output analysis can be, and is being, applied to the study of inter-regional problems both by Leontief and his associates of the Harvard Economic Research Project and elsewhere in the United States and by the Italian Input-Output Unit. But this type of work so far affects only one European country, where regional differences are exceptionally great, and as it is conveniently discussed elsewhere there is no need to say more about it here.

[8] It was pointed out above that the input-output research worker calculating the changes in the quantity of output that will be called for by a given increase in investment demand has to assume (unrealistically) that no increase in consumption demand will result, or to call in a Keynesian colleague to help him. Similarly, if he is asked to calculate the effect of a given increase in wage rates on output prices he has to assume (possibly even more unrealistically) that rates of profit are not affected by changes in wage-rates or to insist that those entrusting him with the task provide some other more plausible assumption.

3. Recent Developments of Open Models

Criticism of the Usual Open Static Models

The open models so far described are clearly nearer to reality than the pioneering model of Leontief in that they distinguish between sectors whose behaviour is better described in terms of elasticities and propensities than of technical coefficients, and sectors where technical factors clearly play an important part. It is an advantage that by enforcing a form of flow table with clear relations to the framework of the national accounts they bring together two kinds of statistical investigation which should obviously be closely

linked. But the assumptions still remain rigorous, and their plausibility has been widely questioned.

In the first place they remain purely static models in which net investment and technical progress can play no part and which are therefore, on the face of it, suitable for application only to a limited class of problems.

Second, even granting that static models have their uses, it has been objected that the assumptions of homogeneity of output within each productive sector and invariance of input coefficients are too restrictive.

The assumption of homogeneity was of course never intended to be taken literally. At most it has been interpreted to mean that each industry's output is of constant composition, or that the composition of its inputs remains reasonably constant even though its product-mix varies. And clearly the plausibility of the assumption is not independent of the classification of industries which is adopted: there are no general rules which apply to a fine as well as to a coarse breakdown of the field of production.

To some extent the same applies to the assumption of fixed input coefficients. The crucial question in any case is not whether the assumption is correct in any strict sense, but whether or not it comes sufficiently close to reality—over the range of variation relevant to the problems to be analysed—to result in tolerably reliable answers to these problems. On this only little evidence is available. Empirical investigation in Australia and in Norway, however, suggests that the assumption of fixed coefficients may be as good an approximation to the truth as any other, as far as inputs of materials are concerned, though it is less satisfactory in the case of labour input. As Goodwin puts it: " What they [economists] wanted, and needed, was the behaviour of the whole economy as it arose from the interdependent motions of the parts. As any student of mechanics could affirm, such a general problem was insoluble, and it should perhaps be given up for lost. Yet regarded simply as the best working approximation, Professor Leontief's method, which had the, perhaps, unique quality of being at the same time an affront to the intelligence of both the empiricist and the theorist, had a great deal to recommend it." [9]

Designing the Tables to Fit the Model

Meanwhile those interested in having a general structural model of the productive sectors have not been idle, and there has been considerable experiment along two different lines. On the one hand there have been attempts to preserve the convenient assumption of linearity by designing the basic flow matrices for particular periods in such a way that linearity can, *a priori*, be more plausibly assumed than was the case in some of the earlier models. In general this means multiplying the number of productive sectors and so drawing the boundaries between them that each sector is genuinely likely to have a stable product-mix, a stable input-composition or, in extreme cases, a uniform productive technique. Hand-loom weaving can be treated as a self-contained industry distinct from weaving on power-looms.[10] This tendency towards further disaggregation has also been encouraged for reasons of statistical convenience in some countries: thus, the master input-output table under construction in the United Kingdom distinguishes as many separate industries (400) as the classification adopted in taking censuses of production permits.

Refining the Model

On the other hand there have been a number of experiments in constructing somewhat more refined theoretical models. It has been observed, for instance, that it is not so much the assumption of fixed input coefficients which is open to criticism for short-period analysis, but rather the assumption in all the early input-output work that the coefficients were fixed at the *average* level ruling in a whole industry at a particular time. The assumption of fixed *marginal* input coefficients is distinctly more attractive. Such an assumption, after all, is always justified for small changes of output, whatever the shape of the production function for an industry, since a curve of any shape can be approximated, over short intervals, by a straight line.

The marginal coefficients, of course, could not be estimated by any mechanical procedure such as that adopted for estimating average coefficients: they would have to be estimated by using input-output tables for a series of years or, better, by direct inquiries from firms known to be expanding or from technologists. But, once they had been assembled, the rest of the analysis could proceed on traditional lines.

This is thus an adaptation of the traditional open model which it is in principle comparatively simple to make—though in practice it may involve a great deal of inquiry and a high degree of judgement—and which has the advantage that a general solution to the struc-

[9] *Journal of the Royal Statistical Society*, Series A (General), Vol. CXV, Part I, 1952, p. 80.

[10] This practice was advocated by Frisch for use in India. In such a case, where the end-product of the two industries is the same, an additional assumption has to be made about their relative weights.

tural equations can still be obtained, if it is so desired, by inverting the matrix.

The Use of the Iterative Method

Increasingly, however, economists working in the input-output field have come to the conclusion that the usefulness of being able to reach a general solution can be over-estimated. In the first place, in the real world the number of likely combinations of values for the exogenous variables is more limited than the pure theorist, with his predilection for continuity, can afford to assume: the number of times a general solution is used may therefore be quite small. Second, and more important, there is an unsatisfactory finality about the inversion of a big matrix: not only does the decision as to which sectors are to be treated as endogenous have to be made once and for all, but corrections to figures in the light of later information cannot be taken account of without a repetition of the whole process.

The tendency is thus more and more for those working with input-output to rest content with particular solutions for particular sets of values of exogenous variables, and to use for this purpose the iterative method of successive approximation.

Consider, for instance, the traditional problem of estimating the changes in the structure of production that will result from a given change in the size and composition of final demand. Let the increase in the final demand for the products of sectors 1, 2, . . . , n be $\Delta Y_1, \Delta Y_2, \ldots, \Delta Y_n$ respectively. The increments of *total* demand falling on each of the sectors will be greater than the increments of final demand because of the extra intermediate product that will be needed. Suppose that in order to produce an extra ΔY_1 of final output sector 1 will need extra inputs from sectors 1, 2, . . . , n of $\Delta X_{11}, \Delta X_{21}, \ldots, \Delta X_{n1}$ respectively; and that, similarly, to produce an extra ΔY_2 of final output, sector 2 will need inputs from sectors 1, 2, . . . , n of $\Delta X_{12}, \Delta X_{22}, \ldots, \Delta X_{n2}$ respectively; and so on. The increments of final demand and the increments of necessary input implied can be recorded in a flow-table identical in shape with the transaction matrix compiled for a particular year: the increments of final demand as elements in the rows and the increments of input as elements in the corresponding columns. Addition across the rows will give the derived demand for each industry's intermediate output which results from the initial increases in final demand. In the case of sector 1, for example, it is $(\Delta X_{11}+\Delta X_{12}+ \ldots + \Delta X_{1n})$, or $\sum_n \Delta X_{1j}$.

So far, however, only the first repercussions of the initial increases in final demand have been taken account of: thus, the extra input calculated for sector 1 is enough to produce an extra ΔY_1 of output but not to produce the extra $\sum_n \Delta X_{1j}$ of intermediate output. It is therefore necessary to proceed to a second iteration, this time taking $\sum_n \Delta X_{1j}$ as a starting point.

In principle there is no limit on the number of iterations which it will be necessary to make before the investigator has an adequate estimate of the total increment of intermediate outputs implied by the initially assumed change in final demand. But in practice it is usually found that the system converges rather rapidly—i.e., that the increments obtained are very small after 3 or 4 iterations, if not earlier.

		Increments of productive sectors' demands after first iteration					Increment of final demand	Increment of total demand after first iteration
		1	2		n	Σ		
Increments of productive sectors' supply	1	ΔX_{11}	ΔX_{12}		ΔX_{1n}	$\sum_n \Delta X_{1j}$	ΔY_1	$\sum_n \Delta X_{1j} + \Delta Y_1$
	2	ΔX_{21}	ΔX_{22}		ΔX_{2n}	$\sum_n \Delta X_{2j}$	ΔY_2	$\sum_n \Delta X_{2j} + \Delta Y_2$
	n	ΔX_{n1}	ΔX_{n2}		ΔX_{nn}	$\sum_n \Delta X_{nj}$	ΔY_n	$\Sigma \Delta X_{nj} + \Delta Y_n$

If the same purely mechanical procedure is followed in estimating the increments of input at each iterative step this method of solution is formally identical with the method of inversion of a matrix.[11] In such circumstances the choice between iteration and inversion is entirely one of computing convenience.

But in general the iterative method has three great advantages:

(1) It permits the investigator to use different input coefficients at successive iterations;

(2) It enables him to study intensively the interrelationships between closely linked sectors of the economy on a variety of assumptions about demand, while neglecting inputs which inspection or common sense show to be unimportant;

(3) It frees him from the necessity to fit his data into the iron framework of a square matrix and may thus enable him to use more information.

All these are great gains which would seem easily to outweigh the aesthetic loss of a general solution of the structural equations.

Variation of Input Coefficients

In many cases the most plausible assumption to make for a reasonably homogeneous sector may still be that of fixed average coefficients, either because there is genuine reason to believe it is an adequate approximation to reality in that particular industry, or for the weaker reason that there are no data reliable enough to justify any other assumption. But in cases where it is known that the limits of capacity are near, that supplies from some source are likely to be cut off, that relative prices are changing, or that additional supplies will have to come from less efficient establishments, it is obviously an advantage to be able to vary input coefficients at successive stages of iteration. Moreover, such variations can be made ad hoc, even though the exact form of the production function is not known. At each stage the computations can be controlled by common-sense considerations.

On the other hand, though it is true that almost any type of information bearing on an industry can be used in input-output analysis of this informal but sophisticated kind, it is equally true that the amount of information which is needed if full advantage is to be taken of the flexibility of the model is very large indeed. Among the pieces of information that would be useful are knowledge of capacity limits; of the way in which inputs vary with utilization of capacity; of the possibilities of substitution and the circumstances under which substitution is likely to occur (especially of home-produced for imported goods or vice versa); of the input structures of different processes in cases where a commodity is, or may be, produced by more than one technical process; of the composition of output, and the possible changes in it that are likely to influence the input structure of the sector; and finally, of the labour requirements corresponding to various output levels.

Failing a great deal of this it is not at all clear how great an advance the liberalization of the assumptions about input coefficients will permit. "Hunches" should never be despised, but if they are to be incorporated, unchecked, into successive stages of a complicated piece of calculation the danger of accumulating errors is obvious.

Short Cuts

So far it has been implicitly assumed that the iterative method has to be applied to the whole complex of structural equations of a model; that is, that all the non-zero entries in the matrix of input coefficients have to be taken into account. But this is by no means the case. Experience shows that some coefficients are of negligible importance—i.e., can be assumed to be zero without substantially affecting the results. In such cases not only are the calculations simplified, but the iterative process converges more rapidly.[12]

If a few sectors are intimately connected, moreover, and their interrelations with other sectors are unimportant, it will be possible to obtain first approximations to solutions for the set of equations linking them without bothering about the equations outside.

With the application of common sense it is thus possible to take a number of short cuts, whatever method has been used to estimate the partial input coefficients which are used.

The Use of Rectangular Matrices

The square flow matrix has two great advantages. In the first place, it permits every statistical estimate to be used twice. Second, it is convenient from the

[11] In particular, if the increments of input are obtained at each stage as a fixed proportion of the increments of demand obtained at the previous stage—i.e., if $\Delta X_{11} = a_{11}\Delta Y_1$, $\Delta X_{12} = a_{12}\Delta Y_2$ . . . and $\Delta' X_{11} = a_{11}\sum_n \Delta X_{ij}$, $\Delta' X_{12} = a_{12}\sum_n \Delta X_{2j}$ etc.— iteration, if it is carried far enough, will give results identical to those obtained by inverting the matrix (I − A) referred to above.

[12] An input-output table arranged so that industries sell primarily to industries above them in the table and buy primarily from industries below them is said to be "triangularized" because most of the non-zero cells are to be found below the diagonal. The more perfect the triangularization—i.e., the greater the number of zeros above the diagonal—the more quickly iteration of the coefficient matrix will converge.

point of view of computation: the square matrix (I−A) can easily be derived from it, and this in turn can be inverted so as to yield a general solution of the structural equations implied by the assumption of fixed average input coefficients.

There are, however, equally obvious inconveniences in having to use precisely the same classification for a sector's purchases (inputs) as for its sales (output). It may well happen that a finer break-down can be made of the one than of the other, so that a flow table with more rows than columns or columns than rows may permit a more informative use of the available data than a square table would.

It was precisely for this reason that the first input-output table constructed for Italy was rectangular: the information available on the composition of each industry's purchases was so much more plentiful than that on the break-down of sales that it was decided to have nearly four times as many rows as columns. Each of the rows represented a commodity, each of the columns a sector. But groups of commodities were identified with producing sectors, so that by consolidating each group it was possible to reduce the rectangular matrix to a square matrix. The *principles* of classification were thus identical for rows and columns.

In France, however, the flow tables published by the Ministry of Finance incorporate two quite distinct principles of classification: the one axis shows sectors, the other products, and there is no correspondence between groups of products and sectors. The information thus cannot be summarized in one table: two tables are needed, one for the sales by each sector of each commodity, the other for the purchases.[13] This severs the final link with the traditional square matrix and, by the same token, emphasizes that the authors have no intention of using their flow tables to form a general model of the structure of the productive process.

The Present Position in Europe

It is a far cry from the beautiful simplicity of the first open Leontief models—that used by the United States Bureau of Labour Statistics, for instance, in its study of full employment patterns [14]—to the flexibility of present-day input-output analysis. In the one case the economists and statisticians concerned had to exercise judgement at one stage only—that of the design and estimation of the commodity flow table for a particular year— and subsequent stages were a matter of purely mechanical calculation. Nowadays those engaged in input-output analysis insist on being free to exercise judgement at every stage—in estimating the input coefficients; in deciding when to stop the iterations; in choosing which coefficients to neglect and which partial sets of equations to solve. Whereas with rigid assumptions everything could be derived from the original matrix of commodity flows for a particular year, in present-day work the preparation of the table may represent only a small part of the work.

At first sight it would seem that of Leontief's original ideas only one—the stress he laid on the analytical gains to be obtained by studying rather intensively the origins and destinations of intermediate as well as final output—remains. But this is by no means the case. It must be emphasized once more that though his assumption of reasonable stability of average input coefficients in well-designed sectors has not been proved, it has not really been disproved. It has been pointed out by several statisticians that the few tests so far applied to his hypothesis have not been conclusive either way. If, for example, it is shown that the output coefficients estimated by statisticians for two not widely distant years are not the same, it does not by any means follow that the whole difference should be explained by changes in technique. Some weight—and in the present experimental stage of input-output statistics in most countries, considerable weight—has to be given to the possibility of statistical error. One source of error in particular suggests itself—the failure to take account, or at any rate adequate account, of fluctuations in stocks of materials held by industries using them as inputs. It is doubtless partly in order to compensate in a rough and ready way for such errors that in Norway coefficients based on an average of several years have latterly been used.

In the meantime government statisticians in several countries are content to use the assumption of fixed average coefficients as a first approximation to the truth, conscious that the policy considerations on which their calculations are intended to throw light will in the last resort be decided by, at best, a blend of intuition, by no means error-free, and calculation. Granted this assumption, they have at their disposal a crude ready reckoner which, however, they have no temptation to think of as an all-purpose precision measure.

Thus the facts that input coefficients *can* be assumed to vary and *can* be estimated on the basis of non-aggregative data do not imply that input-output analysis can proceed without the preliminary compilation of a flow table for a recent year. This remains the first essential.

Indeed it is probable that there is more hope of

[13] The convention adopted is to show the sectors as rows in the sales table and as columns in the purchases table.

[14] See W. Duane Evans & Marvin Hoffenberg: "The Inter-industry Relations Study", *Review of Economics and Statistics*, May 1952, pp. 97-142.

progress in analysis, at least in developed economies,[15] from an improvement in the design of flow tables and the estimation of the flows, than from the elaboration of existing static models or from the attempt to " dynamize " them by introducing capital flows as endogenous variables or by guessing time-lags. It must be remembered in this connexion that an open input-output model, however elaborate, can tell only half the story, and not necessarily the more interesting half: it can be used, for example, to calculate the total effect of a given increase in a particular demand on output patterns *only on the assumption that the initial increase in demand has no effect on other final demands.* Multiplier effects are not taken into account at all. There may be a certain loss of proportion in trying to sophisticate the input-model too greatly, as long as the coefficients (multipliers, perhaps accelerators) in the Keynesian aggregative model which is needed as a complement[16] remain subject to great uncertainty.

[15] In under-developed economies, where expansion can hardly come without considerable, and discrete, changes in techniques of production, this proposition would seem more doubtful.

[16] In principle, of course, there is no reason why the Keynesian model, together with equations explaining the final demand for particular commodities, should not be merged with the open input-output model. But a closed model of this kind would be of a complication not so far attempted anywhere, though it seems to be the idea behind the experimental work being undertaken by various research workers in the Netherlands and Norway, as well as in the United States.

4. Input-output Tables as a Means of improving Statistics

It would be a mistake, however, to suppose that input-output research in Europe has usually, or perhaps ever, been started out of a desire to construct a static model of an economy. In the United Kingdom the compilation of the first input-output table, that for 1935, was undertaken after the war as a straight piece of historical research, and the statistician responsible for it did not go beyond the presentation of the facts for the year, as he found them. In Denmark, Norway and the Netherlands the first inter-industry tables were compiled in government statistical offices, largely as a means of improving the estimates of the components of final demand in the national accounts: granted that national income was being estimated by using statistics of output, it was natural that the disposal of this output should be studied in order to have a check on estimates of final expenditure. In Italy, where it was from the start intended to use the results as " a tool for the investigation of a variety of problems of economic programming ",[17] considerable emphasis is nevertheless laid by the statisticians on the great improvements in national accounting estimates which resulted from the intensive work on inter-industry flows.

In general, indeed, official statisticians in Europe seem to have been drawn to the input-output field as much because of the opportunities which it gave for improving the quality of national accounts estimates as for any other reason. Even in the United Kingdom, where national income and expenditure are both estimated directly and not via production statistics, the national income statisticians stress the value of estimates in a commodity flow table as a means of checking two sets of imperfect estimates.

[17] Vera Cao-Pinna, " Italy ", *The Structural Interdependence of the Economy* (edited by T. Barna), Chapter 13, p. 271.

The gain in quality resulting from the row and column cross-check is not limited to national accounts estimates. It is impossible to compile a commodity flow table without bringing to light inconsistencies of classification, inadequacies of definition and ambiguities as to coverage, which, once discarded, can be removed from future questionnaires. The pattern of gaps in information revealed may also suggest the directions in which the system of statistics needs to be extended.

Finally, an input-output table is bound to have a natural appeal to the statistician because it presents statistics in an orderly manner. " Although input-output accounts are not made for the beauty of the thing itself, the aesthetic qualities of a well-designed ' matrix ' as compared to the more bewildering aspects of an undigested statistical yearbook should not be underrated. Nor should it be forgotten that the work-sheets of an input-output tabulation are the best indexed catalogue of economic statistics one could imagine. "[18]

All this adds up to a strong case for the compilation of commodity flow tables, for purely statistical reasons.[19] But the case appears to be stronger if tables with a large number, possibly some hundreds, of rows or columns, or both, are compiled. It by no means follows that such large matrices can be used, without reduction, in an input-output model, or that a model useful for the solution of a number of particular problems cannot be constructed from data collected in a far more aggregated form.

[18] J. Sandee, " Input-Output Accounts ", *The Structural Interdependence of the Economy*, p. 217.

[19] The statistical advantages of compiling a commodity flow table, it should be stressed, are not dependent on the quality of the estimates in the flow table. The advantages may, indeed, be greatest in countries where statistics are to some extent suspect.

5. The Design of Input-output Tables in Western Europe

Commodity flow matrices for at least one past year are known to have been compiled in the following western European countries: Denmark, Norway, the Netherlands, Italy, the United Kingdom and France. Preparatory work has been started in Austria and Sweden. One of the French tables apart,[20] each of the existing tables can be reduced to a standard form in which the top left-hand quadrant of the table contains the flows of intermediate output (from a row to a column), the cells below it contain " value added " in each industry (or in the production of a particular commodity) and imports, and the cells to its right the flows of final output (from a particular industry or of a particular commodity) to final buyers at home and abroad. In the case of square tables (and the Italian tables, though rectangular, can be reduced to a square by consolidating groups of rows) the sum of the entries in each row—i.e., intermediate output *plus* final output—is identically equal to the sum of the entries in the corresponding column—i.e. domestic material inputs *plus* imports *plus* value added.[21]

Thanks to the intensive discussion, over many years, of the concepts of national accounting, there is little disagreement about the coverage of " value added " and of final demand,[22] or indeed about the ways in which it is useful to break them down. In general, value added is distributed over more than one row and final domestic demand over more than one column. In the most detailed case so far published, Norway, there are five rows for value added—wages and salaries, depreciation, indirect taxes, subsidies (as a negative) and entrepreneurial income—and four columns for final domestic demand —personal consumption, government consumption, changes in stocks and work in process, and gross fixed investment.

There is, however, no such agreement about the lines of demarcation in the main body of the table, nor would it be reasonable to expect it, given the still experimental nature of input-output work, the different considerations which have led to the construction of the tables, and the different nature of the statistical raw material in the various countries. The principles of classification adopted are similar everywhere except in France, but the fineness of the classifications differs widely, and so do the conventions adopted for the valuation and routing of transactions.

Principles of Classification

The commodity flow tables constructed or in course of construction in Denmark, Italy, Norway and the United Kingdom all purport to show flows from and to, and in some cases, within, " industries " defined as collections of productive *establishments* grouped by reference to their principal products, their principal inputs or their main processes. In Italy more input flows than output flows are distinguished (in other words, each industry's costs are more finely broken down than its deliveries); but by grouping input flows from the same industry the rectangular table can be reduced to a square. In the other countries each industry has the same number of potential inputs as it has outlets for its intermediate output.

The rule of classification of activities adopted in all these countries is thus essentially the same as that followed in the collection of employment statistics. And the justification is in the end the same in the one case as in the other—that it is important to relate real inputs, in the one case of labour, in the other of materials, to real output. Accordingly, in principle, all commodity flows between two establishments in different industries—and sometimes between two establishments in the same industry—are included, whether or not they have any financial counterpart.

The practical difficulties of applying the rule are twofold. First of all, business men are usually more likely to know *what* they buy and sell than *from whom* they buy and *to whom* they sell. The breakdowns of both outputs and inputs thrown up by normal statistical questionnaires and even by special inquiries thus tend to be by commodity rather than by sector of destination and origin. And though a rough correspondence can be drawn up between groupings of establishments and groupings of commodities, nothing can eliminate the problem (which will be discussed below) that one industry's secondary output is another industry's principal output. Second, it may be more difficult to obtain details of intra-enterprise flows [23] than, for example, to obtain

[20] The exception is the table compiled in France, which shows the sales of sectors broken down by commodity.

[21] Leontief's first matrix did not have this convenient property.

[22] The main disagreement is over the coverage of one component of final demand (gross fixed investment) and one component of value added (depreciation): both these items are interpreted in a wider sense—so as to include repairs—in the Scandinavian countries.

[23] In fact, most input-output tables exclude not only intra-enterprise flows, but also all intra-sector flows. The " net " input coefficients derived from such matrices are of course larger than " gross " coefficients (in theory preferable) would be.

a break-down by establishment of a composite enterprise's labour force or wage-bill. In practice, therefore, statisticians have to temper the vigour of their definitions and to treat the enterprise as synonymous with the establishment, except in the case of the largest enterprises.

It is doubtless in part because of these practical difficulties, accentuated by the need, in the absence of a recent census of production, to rely heavily on fiscal data collected from enterprises, that the French statisticians have preferred to take the *enterprise* as their basic unit,[24] and to limit their attention to those commodity flows which have an actual, as distinct from an imputed, financial counterpart. Once this decision had been taken, the construction of an input-output table—in the sense of a " to-whom-from-whom " table—was obviously out of the question and it was necessary to construct two asymmetric tables, the one showing a commodity break-down of purchases by group of enterprises (including purchases from enterprises within the same group) and the other showing sales of groups of enterprises (including sales to enterprises within the same group).

The table of enterprises' purchases looks formally similar to the Italian master table, because it also includes columns for purchases by final buyers and rows for imports and value added. But in fact it differs in several important respects. It cannot be transformed into a square table, because of the lack of any correspondence between the enterprise classification and the commodity classification.[25] It includes more duplication, in the sense that all enterprises' purchases are included. And, finally, because the output of a group of enterprises is likely to be less homogeneous and more subject to change than that of a group of establishments, input coefficients calculated from it could probably less plausibly be expected to be stable. This does not mean that the table cannot be used for analysis: it merely means that it can hardly be used for input-output analysis.

Fineness of Classification

The input-output tables published in European countries present a very wide range of variation of size: at the one extreme is a 10×10 table for the British economy in 1950, at the other a 220×56 table for the Italian economy in the same year.[26] In the middle ranges square tables with 20 to 40 industrial sectors have been published for Denmark, the Netherlands and Norway for several years. Finally, bigger tables are known to have been compiled, but not published, for particular years in the Netherlands and Norway, and very big tables for the year 1948 in the United Kingdom (about 400×400) and for 1952 in Italy (about 500×60).

A distinction should, however, be drawn between tables which are intended mainly for descriptive purposes or whose compilation is undertaken at infrequent intervals in order to test the consistency of statistics, and those which are intended for use with a model. The optimum size of the first type is almost entirely a matter of statistical judgement. If the basic statistics at the research worker's disposal have been compiled without consideration for his needs—which is always the case with the pioneering tables in any country—he has to judge what degree of disaggregation of intermediate output will give him the most accurate estimates of flows. A high degree of disaggregation may give him the opportunity of cross-checking his estimates more systematically; at the same time it may multiply unduly the number of arbitrary assumptions he has to make.

If the statistician is in the happier position of being able to plan the collection of data to meet the needs of input-output work, the judgement he has to exercise is of a somewhat different kind: it involves balancing the cost of complicating statistical questionnaires against the possible gain in accuracy.

In both cases, the choice between a square table and a rectangular table is entirely one of convenience. A square table may have some advantages in that the same figure can be used in two different connexions. On the other hand, it is likely that the compiler of a table will in fact have to use a multiplicity of statistical sources, and it by no means follows that just because he can estimate flows from A to each of B and C, he can also estimate both the flows in the other direction from B and C to A, while it may be quite feasible to estimate the joint flow from B and C together to A. In such a case there may be a loss of accuracy if symmetry is insisted on.

But it is very likely that the degree of disaggregation which will yield the most accurate estimates of flows will give a table too large to be conveniently used in analysis. There are two reasons for this. In the first

[24] The western German statisticians are evidently thinking on similar lines.

[25] Even though the main object of the French statisticians is clearly not to construct an input-output table for use in connexion with a general model, it seems somewhat surprising that an attempt has not been made, as in the Netherlands, to work out such a correspondence, at least at a rather high degree of aggregation.

[26] In each case the first figure refers to the number of rows (groups of commodities) and the second to the number of columns (industries).

place, as was pointed out earlier in this article, the commonest type of problem which the input-output analyst is asked to solve is the estimation of the effects on output patterns of a given change in the pattern of final demand. He would be a bold man who was willing to assume a hypothetical breakdown of final demand into more than, say, thirty commodity groups. Second, the whole input-output approach is based on the assumption that input-coefficients have a certain stability. An input-output model in which there is not an inherent plausibility in this assumption is an inefficient model. Experience (and common sense) suggests that though with too much aggregation the derived coefficients will be based on averages of groups so big as to be devoid of significance, equally, if disaggregation is carried too far the stability of the coefficients will be undermined by the increasing possibilities of substitution.[27]

This does not by any means imply that the compilation of big input-output tables is wasted effort (though it might well be a wasteful use of resources to compile them annually). For one thing, it is not possible to judge *a priori* what activities or commodities can properly be grouped together, nor is the degree of aggregation needed for a satisfactory coefficient matrix necessarily the same for all problems or in all years.[28] Secondly, it is in general true that with more refined break-downs of the basic material, errors will be more evenly distributed over the input-output table, so that the model-builder will not be tempted into a higher degree of aggregation of some sectors merely because the data for them are relatively inaccurate.

Valuation Conventions

In principle, commodity flows could be expressed in terms either of physical or of monetary units. In practice, of course, the number of separate flows that would have to be distinguished if the commodity to which each related were to be sufficiently homogeneous to justify use of a physical unit is far too great to be feasible. As in other branches of statistics, the necessity of aggregating heterogeneous data forces the use of price weights. This has the compensating virtue, however, that row totals for a sector can be checked against column totals.

The prices which are used as weights could again either be market prices or an approximation to factor costs. In fact, market prices—i.e. prices including (net) indirect taxes—have always been used.

And they could be the prices of the current year, of some earlier base year, or, in a centrally planned economy, the accounting prices used in estimating plan fulfilment. In practice only the Danish and Norwegian statisticians have so far compiled tables for a particular year in which the commodity flows are valued at the prices of another year. Elsewhere the use of current prices has been universal. It has thus been possible to estimate the commodity flows by collecting financial data taken from firms' accounts.

The choice of current market prices as weights still does not solve the problems of design, because of the difference between the price a producer receives for his produce and the price a consumer pays for the same produce when it is delivered to him. But this further problem is probably better dealt with as one of a number of routing problems.

Routing Conventions

In a closed economy where there was a perfect correspondence between commodity and establishment classifications and where trade margins and transport charges all fell at the same stage, there would be no routing problems: the compiler of an input-output table would merely aim to measure the commodity flows which actually took place in the economy. The necessity for routing conventions arises from three causes: the facts that some commodities are imported as well as produced at home; that the output of establishments is often quite heterogeneous in composition; and that producers' selling prices differ considerably, even within the same industry, as to the extent to which they cover transport charges and trade margins.

Import conventions. — All input-output tables include a row for imports, the entries in which are normally in terms of c.i.f. prices. In the case of imported goods which have no domestic counterpart, there is no difficulty about deciding what the sectors are to which they flow. Obviously these are the sectors which consume the goods as input or final output. But in the case of imported goods which compete with domestic products and which are consumed in a number of different sectors it will normally be difficult, if not impossible, to determine the proportion in

[27] A table with too high a level of aggregation would, by overestimating substitution possibilities, probably overrate the production potential of a given economy, while conversely an insufficiently aggregated table, by under-estimating substitution possibilities, would underrate production capacity.

[28] It is, for instance, often necessary to choose between the aggregation of successive activities (weaving and spinning) or of parallel activities (cotton spinning and rayon spinning), or between aggregation by reference to similarity of output or of input. There is no reason to believe that there is one optimum solution for all purposes.

which the various consuming sectors use imported and domestic supplies.

One way of dealing with the situation would be to assume that every consuming sector of a particular commodity uses imports and domestic supplies in the same proportions. If competitive imports are small and likely to remain small, in relation to domestic supplies, this situation may be acceptable. It really amounts to treating foreign exporters to the country as an " industry " with a stable " output " pattern. And it implies focusing attention on the ratio of an industry's domestic input of a material to the industry's *total* output. If imports are small, this ratio will not differ much from the ratio of *total* input to total output.

But it has obvious disadvantages in cases where the ratio of imports of a material to domestic supplies is likely to be unstable.

As this is the typical situation in Europe, there is probably more to be said for one of two closely similar procedures: that followed in current British work, by which competitive imports are routed through the domestic industries producing similar goods, whose inputs and outputs are thus inflated to an equal extent,[29] and that adopted in Italy and Norway, by which competitive imports are regarded as negative final demand. As long as imports are treated as an autonomous sector, these two methods seem to be identical.

The problem of the valuation of purchases of imports, whether by competing or consuming sectors, is left for discussion below.

Secondary products. — Establishments are usually grouped by reference to their main product or class of product. But in the real world it is very common for a single establishment to produce, in addition to its staple lines, a number of other commodities. And it may happen that quite a large proportion of the total output of a particular commodity originates in industries other than the industry of which it is the principal product. Given that the aim is to compile a flow table which can be reduced to a square matrix with identical classifications of rows and columns,[30] the problem is to find some way of determining how much of each consuming sector's demand for the commodity can be said to be met by each of the producing sectors.

Two conventions have been suggested. The one involves distributing an industry's output of secondary products between the consuming sectors in the same proportion as its output of its principal products. The other procedure is to treat an industry's secondary products as the output of that industry and as the input (and output) of the industries among whose main products they are. This second convention has a very definite advantage if the table is to be used for analytical purposes, in that it makes the assumption of stable coefficients more plausible. The device of introducing two artificial flows is clearly analogous to the procedure discussed above for dealing with competitive imports.

One further expedient should be mentioned: the invention of a dummy sector into which the secondary output flows from its sector of origin and out of which it flows to its sector of destination. It is to be feared that this is often a necessary procedure to adopt for unclassified or unclassifiable outputs and inputs. But to have a residual sector called " unallocated " is contrary to the basic aims of the input-output approach, particularly troublesome when input-output tables are to be used for model-building, because it cannot be treated as an ordinary productive sector with input coefficients of a certain assumed stability. It is therefore the constant aim of input-output statisticians to reduce the scope of, and if possible to eliminate, the " unallocated " sector.

The treatment of trade margins and transport charges. In the real world some commodities flow direct from producer to user and some go through wholesalers and retailers. Moreover the prices charged by producers sometimes include, and sometimes exclude, the costs of transporting goods to the trader or user, as well as sales taxes. Nor is there any uniformity of practice within any particular sector or for a particular class of goods. This means that any effort to record the actual flows within an economy, heterogeneous as they are, would be misdirected if the object is to construct a table from which useful input coefficients can be derived. There is thus no escape from the necessity of adopting some convention and sticking to it.

Two extreme solutions can be ruled out at once. It is not feasible to do without sectors for goods transport and the distributive trades (even if it were thought desirable), because of the practical impossibility of allocating the material inputs of goods transport and trading activities over the commodities originating in the various producing sectors. It would probably be feasible to construct a table in which the " output " of the distributive trades was their

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[29] Two variants of this should be mentioned: in the Netherlands all imports except those of finished goods are routed through competing domestic industries, and in Denmark all imports.

[30] And that business men can answer " What ? " but not " To whom; from whom ? " questions.

sales (and additions to stock) and in which, correspondingly, their inputs included all purchases from producing sectors.[31] But it would not serve the purposes of input-output analysis, as in such a table final output would originate in the trade sector, and there would be no way of discovering what proportion of a producing sector's output satisfied final demand.[32]

There is, therefore, general agreement that an input-output table should contain sectors for goods transport and distribution, and that the " output " of these sectors should be measured, in the one case by transport charges and, in the other, by the excess of traders' sales and changes in stocks over their current purchases.[33]

There is, however, as yet no agreement as to whether it is more convenient to regard the " output " of the transport and distributive sectors as consumed by the producers, or by the users, of the goods transported and distributed. In the one case commodity flows from producing to consuming sectors are valued at delivered prices—retail prices in the case of consumer goods—and the trade margins and transport charges are treated as inputs of the producing sectors. In the other case, commodity flows from producing to consuming sectors are valued at ex-farm or ex-factory prices and transport and distributive services are assumed to be paid for direct by the consuming sectors as separate transactions.[34] In Denmark, Italy and Norway practical statistical considerations dictated the use of purchasers' prices in the first tables compiled, but whereas in Denmark and Norway a switch was made to producers' prices when the statistics permitted it for later years, in Italy the statisticians have preferred to stick to purchasers' prices even for a year when either method would have been equally feasible.

Those statisticians who have opted for the use of producers' prices have done so out of a desire to be able to calculate input coefficients for which the assumption of stability has maximum plausibility. They point out that the cost of distributing an industry's output depends in part on the proportion in which this output flows to different destinations and that there is no reason to assume these proportions will be constant over time. Coefficients calculated from flows valued at producers' prices will thus be inherently more reliable.

Those who prefer purchasers' prices admit that this would be so if producers' prices were accurately known but point out that in practice estimates of the producers' prices paid by each purchasing sector are often rather precariously based.[35] There may thus be a loss of accuracy which will offset the superiority from a conceptual point of view. In addition there is the disadvantage that it is impossible to read off from an input-output table in which producers' prices have been used a commodity or industry breakdown of final demand valued at the prices actually paid.

Dummy Industries. — When a given group of goods and services is separately distinguishable by sector of origin and by sector of use, but without the link between these classifications being known, a dummy sector (of a more respectable kind than the one mentioned above) can be created to provide the necessary link—e.g., for office supplies, spare parts, etc. Experience has shown that in the construction of an input-output table, the use of dummy sectors at intermediate stages often facilitates statistical checks, and it is usually possible at a later stage to dissipate them within the table.

Dummy sectors may also be systematically used when it is desired to isolate and focus attention upon an activity which is not particular to any single industry, but is engaged in by a number of industries. The packing industry is an example of such an activity.

It is, however, undesirable artificially to increase the volume of transactions by grouping products in a manner other than that corresponding to reality. Use should therefore only be made of dummy sectors when they correspond to a real need.

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[31] Indeed, this is the principle followed in the two French tables of sales and purchases of commodities by sectors.

[32] An instance should be mentioned in which, however, this procedure has been adopted for the import trade. The Norwegian input-output table for 1948 contains a " dummy " sector called " import trade " whose credits (row entries) are sales of imported goods at Norwegian selling prices—to consuming sectors (in the case of non-competitive imports) or to producing sectors (if they are regarded as competitive imports)—and whose debits (column entries) consist of purchases, at c.i.f. prices, from the autonomous sector " imports " (a row), and purchases of trading services.

[33] This is on the assumption that current price weights are used in valuing the flows of goods and services. If the prices of another year are used it is of course necessary to find some volume indicators as well.

[34] Even when a choice between producers' prices and consumers' prices has been made a decision still has to be taken about the routing of transport services. They can be treated either as flowing direct to producers (or consumers) or, as in the Netherlands, as routed through the trade sector.

[35] It is necessary to estimate the distributive margins which have to be imputed to each consuming sector. This often has to be done quite crudely by assuming that the total distribution costs of each producing industry (which are calculated directly or indirectly) can be allocated among its products in proportion to their relative value, and that the distributive costs of each product can in turn be allocated among the industries supplied in proportion to the relative value of sales.

6. Conclusion: Purposes and Possibilities of International Standardization

Input-output work is a new and apparently developing field of statistics and the question arises whether a standardized system could be adopted as a framework for national work. Certainly such standardization as can be achieved would be useful, since some potentially valuable international aspects of the work can be conceived. It may ultimately be possible to consider the linking of national models to form regional or international models, but at present this prospect is a distant one. It is of interest, however, to compare the economic structure, the internal relationship and the general working of different economies and to be able to do this in the detail which input-output tables permit. Also, provided due caution is observed, it may be possible to make use of coefficients established for one country in drawing up a table for another country (especially if it is of similar economic structure), either as a substitute for missing information or as a check on doubtful information. Finally, standardization—especially in terminology, but also in more substantive fields—would help in the understanding of work carried on in different countries, a point which has not been without importance in this field.

But in the light of the argument of the present article, in which the whole emphasis has been on flexibility, it would appear neither possible nor desirable at the present time to set up a standardized system which covers the fundamentals of the work. Thus it would appear inappropriate (and certainly premature) to attempt to standardize the purposes and conceptual basis of the work, or the set of theoretical assumptions to be adopted for analytical purposes. Moreover, there can be no confidence that major changes, at least of emphasis, will not yet take place in the approach, or the approaches, to the subject. It seems that in western Europe there is need for more experience, more experimentation and further consideration of objectives and concepts before the stage of possible standardization arrives. Nevertheless, it might be possible to discover steps which could be taken to limit the amount of arbitrary and unnecessary diversity which is frequently found in older statistical fields and which is difficult and expensive to overcome once national practices become set.

The aspects of the subject which are possible candidates for standardization are limited, however, by the fact that input-output compilations are essentially dependent on the basic sources of national statistics, comparatively little data in any country being collected directly for this purpose. And on most of the points on which standardization for input-output tables might be proposed, international standards have already been set up, or are being set up. Their adoption for basic statistics automatically ensures a good deal of standardization in input-output tables. Thus it would clearly be advantageous if, whatever the number of sectors in tables, they were defined in terms of a standard classification (naturally at the appropriate level of detail). The International Standard Industrial Classification of All Economic Activities has already been adopted for general statistical purposes, and the position is similar for commodity classification, where the Standard International Trade Classification exists. International standards have also been set up for basic industrial statistics, including industrial censuses which are likely to provide the source of much input-output data.

Many concepts and practices in input-output work are the same as, or similar to, corresponding concepts and practices in national accounting, where international standards have been set up. The existing work in all these fields should, of course, be examined to ensure that it is reasonably satisfactory from an input-output point of view. But unless something quite basic is found to be wrong, it would be better to accept these standards and reinforce the other arguments for putting them into force than to attempt to set up a rival set of standards for this purpose alone.

ANNEX

Input-output tables constructed in various western European countries

Denmark

1. 1930-1939 (each year):

Nationalproduktet og Nationalindkomsten, 1930-1946, Statistical Department, 1947.

Dimensions: 14×14, *plus* rows for value added, and imports (c.i.f.); and columns for final domestic demand, and exports.[1]

Classification: The 14 sectors distinguished are: agriculture (including horticulture, forestry and fishing); manufacturing; * handicrafts; * building and construction; * commerce, banks, insurance; * transport; professional services; public goods and services; and rent of dwellings. The four sectors marked with an asterisk are further subdivided between durable goods, and non-durable goods and services.

Valuation: At purchasers' prices.

Imports: All treated as inputs of the sectors producing similar goods.

2. 1947 and 1949:

Nationalindkomsten 1938 og 1947-54, Statistical Department 1955, Appendix I-II, Tables 45-49.

Dimensions: 28×28, *plus* rows for imports (of goods and services); net indirect taxes; depreciation, maintenance and repairs; wages; and other factor income; and columns for fixed investment (8 columns), increases in stocks, total consumption, and exports of goods and services. Normally shown in a reduced 20×20 form with all the manufacturing sectors consolidated into one. The inverses of the corresponding 20×20 (I − A) matrices have been calculated but not published.

Classification: Stated in terms of classes of the ISIC. The unit is the establishment. The sectors are: agriculture, forestry and fishing (5), peat and lignite production (1), manufacturing (9), handicrafts (1), building and construction (1), gas, electricity and water (1), trade (2), transport (1), other services (7).

Valuation: At sellers' prices (including, however, the cost of transport in the seller's vehicles). The outputs of the distributive trades and transport are defined as their gross trading margin and transport charges, respectively, and are treated as inputs of the purchasing sectors.

Intra-sector transactions are included.

The 1947 table has been re-calculated at 1949 prices and the inverse matrix derived.

ITALY

1. 1950:

The Structure and Growth of the Italian Economy, U.S. Mutual Security Agency, Rome, 1953.

Dimensions: 200 rows (commodities) and 56 columns (sectors) *plus* rows for value added, and imports;[2] and columns for households, private fixed investment (including repairs), central government, exports, and increases in stocks. As the commodities were grouped by sectors a square matrix distinguishing 56 sectors could be derived from it. The matrix (I − A) and its inverse were calculated, and published, for a still further reduced 16×16 matrix, containing the following sectors:

	Number of the original sectors contained	Number of commodities covered
Agriculture, forestry and fishing	7	27
Fuel extraction	2	5
Mining (other than fuel)	2	14
Food, drink and tobacco processing	10	26
Textiles, artificial fibres and clothing	10	24
Chemicals	2	20
Lumber, paper, rubber, etc.	6	11
Ferrous metals	1	12
Non-ferrous metals	1	14
Mechanical products	6	24
Non-metallic minerals	1	6
Construction	1	1
Petroleum refining	1	6
Gas and coke	1	3
Electric power	2	2
Services	3	5
	56	200

Classification: Similarity of inputs. Said to be very close to ISIC. The establishment is the unit.

Secondary products are treated as the output of the industry producing them and the input of the industry of which they are a principal product.

Valuation at purchasers' prices. Transport costs and trade margins (the " output " of transport and the distributive trades) are thus treated as inputs of the sectors producing the goods transported and distributed.

Intra-sector transactions are included.

2. 1953:

Relazione generale sulla economia del paese, presentata al Parlamento dal Ministro del Bilancio, 31 March 1954.

Dimensions: 25×25, *plus* rows for net output, depreciation, services rendered by public authorities to producing sectors, and imports (c.i.f.) which are, however, already included in the input-output table; and columns for households, total fixed investment (excluding repairs), central and local government, exports (f.o.b.) and " changes in stocks, duplications and errors ". Derived from an unpublished rectangular matrix with 300 rows (commodities) and 25 columns (sectors).

Valuation at purchasers' prices, as in the 1950 table.

All imports are assigned to the national sector producing similar goods.

Intra-sector transactions are excluded.

NETHERLANDS

1. 1938 and 1946-1953:

(*a*) 1947 and 1948: *De Nationale jaarrekeningen : doeleinden, problemen, resultaten*, Central Bureau of Statistics, 1950.

(*b*) 1948 and 1949: *National Accounts of the Netherlands, 1948-1949*, Central Bureau of Statistics.

[1] In fact imports are shown as a column, and value added is not explicitly shown at all, but the data can easily be rearranged in the more usual form set out in the text above.

[2] Imports are in fact shown as a column.

(*c*) 1950: *Statistische en econometrische onderzoekingen*, Central Bureau of Statistics, first quarter, 1951.

(*d*) Quarterly figures for 1950 and first three quarters of 1951: *Statistische en econometrische onderzoekingen*, Third quarter, 1951, and first quarter, 1952.

(*e*) 1938, 1946, 1947 and 1948: *National Accounts Studies, Netherlands*, OEEC.

Figures for other years have not been published.

Dimensions: 27×27, *plus* two dummy sectors: (*a*) " Imports of final goods " (shown as a sub-heading under " Commerce ") and (*b*) " Re-distribution of profits " (since profits, entrepreneurial income, etc., cannot be directly allocated for each individual branch to the sector concerned, they are first allocated to households and, then, *in toto*, re-distributed over the sectors concerned), *plus* 22 rows for the following payments to sectors: [3]

(*a*) Government: price reducing subsidies on imported goods; direct taxes; indirect taxes; goods and services; interest and profits;

(*b*) Consumers: premiums for social insurance, etc.; wages and salaries; profits and entrepreneurial income; pensions, leave allowances and benefits; imputed interest;

(*c*) Rest of the world: goods and services; benefits; wages and salaries; profits and interest; imputed interest;

(*d*) Capital account: depreciation allowances; consumption from stocks; saving and loans;

(*e*) Insurance funds: premiums; imputed premiums; subsidies; interest;

plus 10 columns for the following sectors of destination: government (with subdivisions for " price-reducing subsidies "; " goods and services " and " subsidized education "); consumers; foreign countries; insurance funds and capital account (subdivided by " investment goods ", " stocks with producers ", " work in process " and " stocks in trade ").

No inverse matrices have been published.

Classification and treatment of secondary products: The unit of classification is usually the enterprise, in some cases the establishment. However, the individual enterprises are regrouped in such a way that they form groups which produce goods that are supposed to be homogeneous. In some instances the data from one enterprise had to be broken down in parts. Secondary products of minor importance are included with the output of principal products. They are therefore not routed through the industry of which they are the principal product. The following industries of origin and destination are distinguished in the published tables: earthenware, glass, lime and stoneware; diamond works; graphic industry, photography; building and similar industries; chemical industries; goods of wood, cork and straw; clothing and cleaning; objects of art; leather, oilcloth and rubber industry; mining, peat cutting, etc.; metal industry, ship-, airplane- and coach-building; paper industry; textiles; gas, electricity and water-works; foodstuffs, tobacco, etc.; agriculture; fishing and hunting; commerce (broken down between " imported final goods ", " publishing " and " other "); traffic, hotels, restaurants, cafés; banks and other financial institutions; insurance; other industries, professions; religion; domestic services; and exploitation of real estate.

Valuation: At sellers' prices including excise and sales taxes, which are treated as a payment by producers to the government. Trade margins and transport charges (except for transport within an enterprise) are treated as a single input item for each purchasing sector. Transport charges are an input of trade.

Intra-sector transactions are included.

Imported materials are allocated at c.i.f. prices direct to the sectors purchasing them; imported final goods are routed through the dummy sector at c.i.f. prices. All import duties are regarded as part of the trade margin paid by purchasers to trade and by trade to the government.

2. 1948:

For this year a table, conceptually similar to the earlier ones, has been prepared on the basis of the ISIC.

Dimensions: 40×40.

NORWAY

1. 1948:

Odd Aukrust: *Nasjonalregnskap, 1930-1939 og 1946-1951* (National Accounts, 1930-1939 and 1946-1951), Central Bureau of Statistics, 1952, Table 40 and explanatory notes in English, pp. 331-335.

Dimensions: 30×30, *plus* two dummy sectors: (*a*) import trade, whose two inputs are total imports (except of ships) valued c.i.f. and total customs duties and trade margins on imports, and whose outputs (the inputs of other sectors) are imports valued at sales prices in Norway; and (*b*) unallocated items; *plus* rows for wages and salaries, entrepreneurial income, depreciation, indirect taxes, subsidies (negative), and imports (at selling prices in Norway); and columns for total consumption, gross fixed investment, changes in stocks and exports.

The corresponding (I − A) matrix has been inverted.

Classification: Very close to the ISIC. The unit is the establishment. The sectors are agriculture, forestry and fishing (4), mining (3), manufacturing (12), construction (1), gas and electricity (2), trade (1), transport and communications (3) and other services (4).

Valuation: At purchasers' prices. Trade margins and transport charges are thus treated as inputs of the sectors producing the goods distributed and transported.

Intra-sector transactions are excluded.

2. 1950:

Nasjonalregnskap, 1938 og 1948-1953 (National Accounts 1938 and 1948-1953), Central Bureau of Statistics, Oslo, 1954, Table 40 and explanatory notes in English, pp. 217-219.

Dimensions: 27×27, *plus* 2 dummy sectors as in the 1948 table, *plus* the same additional rows and columns as in 1948 except that this time there are two columns for consumption—private and public. Derived from a 78×78 table.

Classification: Almost as in the 1948 table, except for mining (1), gas and electricity (1).

Valuation: At sellers' prices. Trade margins and transport charges are thus treated as inputs of the sectors buying the goods distributed and transported.

Intra-sector transactions are excluded.

UNITED KINGDOM

1. 1935:

T. Barna, " The Interdependence of the British Economy " *Journal of the Royal Statistical Society*, Series A (General), Vol. CXV, Part I, 1952, pp. 52-53.

[3] A table is also published in which these payments are rearranged in such a way that they show the contribution of national income and transfer incomes for each sector separately.

Dimensions: 36×36, *plus* rows for imports (c.i.f.), unallocated goods and services, value added (including depreciation) and net indirect taxes, and columns for households, public authorities, fixed investment, exports (including the whole output of British shipping) and " unallocated, stocks, exports, etc." A reduced matrix 10×10 is also shown.

The corresponding (I − A) matrix has been inverted, but the results have not been published.

Classification: By reference to the United Kingdom census of population industrial classification. The establishment is the unit. The sectors distinguished are distributed as follows: agriculture and fishing (1), mining (2), building materials (1), manufacturing (28), building and construction (1), gas, water and electricity (1), services (2).

No dummy industries: Secondary products are treated as the output of the industry which actually produces them and an input of the using sector.

Valuation at sellers' prices: The output of the distributive trades is defined as their gross trading margin and is treated as input of the purchasing sectors. Similarly, all imports are allocated direct to users.

Intra-sector transactions are included.

2. 1948:

National Income and Expenditure 1946-1951, HMSO, 1952.

Dimensions: 8×8.

3. 1950:

National Income and Expenditure, 1955, HMSO, 1955.

Dimensions: 10×10, *plus* rows for wages and salaries, gross profits (including rent), net indirect taxes, imports of goods (f.o.b.+foreign freight) and services, and sales by final buyers, and columns for households, public authorities, fixed investment, physical investment in stocks, and exports of goods and services.

The corresponding (I−A) matrix has been inverted, but the inverse matrix has not been published.

Classification: The United Kingdom Standard Industrial Classification (close to the ISIC). The establishment is the unit. The sectors distinguished are: agriculture and fishing (1), mining and quarrying (1), manufacturing (4), building and construction (1), transport, trade, finance, etc., (1), and a sector with no input from other industries covering public administration, defence, public health and education services, ownership of dwellings and domestic services (1).

Valuation: At sellers' prices.

Intra-sector transactions are excluded.

4. 1948:

Work on a detailed table for 1948 was started in 1953 by the Board of Trade and the Department of Applied Economics of the University of Cambridge.

Dimensions: c. 400×400.

Classification: The United Kingdom Standard Industrial Classification.

Secondary products are shown as the output of the industry which actually makes them and an input of the industry of which they are a principal product.

Valuation: At sellers' prices.

Imports: " competitive " imports are routed through the so-called competing industry; non-competitive imports are allocated direct to the using industry.

FRANCE

1951:

Rapport sur les comptes de la nation, Volume II, Méthodes, Annexe 3, " Premiers résultats de l'analyse des achats et ventes des secteurs ", pp. 305-316.

For France no input-output table of the usual type has been prepared, or is contemplated. For the year 1951, however, two somewhat different tables have been published, which should be mentioned here. The one shows the sales of sectors of the economy, the other their purchases.

The sales table has 42 rows (sectors) and 43 columns (commodities), *plus* rows for public authorities, imports, households, and sales by specified sectors, and columns for sales of unspecified commodities, and closing stocks.

The purchases table has 43 rows (commodities) and 42 columns (sectors), *plus* rows for purchases unallocated by commodity, wages and salaries, social charges, net indirect taxes, opening stocks and entrepreneurial income; and columns for purchases unallocated by sector, public authorities, exports, households and fixed investment.

These two tables are derived from unpublished master tables with 112 productive sectors and 105 commodities.

The relationship between the two tables can best be explained by reference to the operating account of a group of enterprises, set out as follows:

Debits	*Credits*
Purchases on current account, broken down by commodity (43 identifiable items and one unallocated item)	Total sales, broken down by commodity (43 identifiable items and one unallocated item)
Wages and salaries	Closing stock (not broken down)
Social charges	
Indirect taxes *less* subsidies	
Opening stock (not broken down)	
Gross profit	

The debits in this account appear as a column in the table of purchases by sectors, the credits as a row in the table of sales by sectors.

Or one can think of an account showing the total supply of a particular commodity and its disposal:

Supply	*Demand*
Gross domestic output of the commodity, broken down by sector of origin (42 identifiable sectors and one unallocated)	Purchases for further processing broken down by industry of purchase (42 identifiable sectors and one unknown)
Imports of the commodity	Purchases by final buyers Government Rest of world Households Capital account

The supply side of this account appears as a column in the table of sales by sectors, the demand side as a row in the table of purchases by sectors.

CORRIGENDA

to the

ECONOMIC SURVEY OF EUROPE IN 1955

Chapter 1

Page 28, 1st column—*Delete* the text table and *substitute :*

Expenditure in western Europe

	Millions of current dollars		
	1953	*1954*	*1955* [a]
United States military expenditure	859	1 280	1 415
Off-shore purchases	311	565	668
United States economic aid (grants only) . . .	1 138	611	490
	2 308	2 456	2 573

[a] Preliminary estimates based on incomplete data for the year.

Consequential correction: 1st column, 5th line after the table —*For* " $3 billion " *read* " $2.5 billion ".

(*Explanatory note.* — The changes in the figures for 1954 and 1955 result from the correction of an error due to the failure by the secretariat to eliminate duplication of certain items under the headings " Military expenditure " and " Economic aid.")

Chapter 4

Page 100, footnote 43—*For* " Tables 1 and 3 " *read* " Tables 45 and 47 ".

Page 106, Chart 7, Security yields and share prices in selected western European countries: Denmark, Government bond yield—*For* " 4% " *read* " 6% ".

Chapter 5

Page 124, 1st column, footnote 9—*Delete* last sentence.

Page 161, Chart 12, Movements of hourly money earnings in manufacturing industry and of the cost of living : 3rd row of country charts—After " France," *add* footnote reference " *c* ".

Chapter 6

Page 174, 2nd column, lower text table—*Delete* column for Czechoslovakia.
(*Explanatory note.* — The data quoted refer to total crop and not to yields per hectare.)

2nd column—*Delete* footnote 20 and footnote *c* to Table 82.
(*Explanatory note.* — The statement, as printed in *Scînteia*, 23 August 1954, and subsequently reproduced in various Rumanian periodicals, contained a printing error: the average grain harvest for 1949-53 should have read " 6.53 million tons " and not " 4.53 million tons ". This rectification answers the point raised in footnote 20. The correct figure should also be substituted in the SURVEY for 1954, p. 48).

Page 175, Table 83, Livestock numbers in eastern Europe: *Sources*, 4th line—*For* " 1956 " *read* " 1955 ".

Page 180, 2nd column, 2nd paragraph—*Delete* last sentence and substitute " This conclusion is supported by Mr. Khrushchev's remark at the XX Party Congress on 14 February 1956 that there was no necessity for each eastern European country to develop all branches of its economy when there was advantage to be gained from trade."

(*Explanatory note.* — The statement that the Soviet Union was to grant credits totalling 21 billion roubles to eastern European countries was based on a mis-translation from the Russian. Mr. Khrushchev in fact said that the Soviet Union had already granted long-term credits of 21 billion roubles to the Peoples' Democracies.)

Page 181, 2nd column, line 4—*For* " Table 87 " *read* " Table 86 ".

Page 182, 1st column, 5th line from bottom—*Delete* the sentence " Thus, the Czechoslovak plan ... exports to Latin America."

Page 189, 1st column, line 14—*For* " 1954-1955 " *read* " 1950-1955 ". Line 26—*For* " output of tractors, notably, being about twice as great as planned " *read* " output of tractors in particular being substantially above that planned ".

Chapter 7

Page 199, Footnote 11—*Delete* " probably. "

Page 215, Table 100, Finance of investment in eastern European countries—*Delete* footnote " *b* ".

Page 224, Table 107, Planned and actual increase in industrial output during the long-term plans, Cement, Rumania, Percentage increase—*For* " 56 " *read* " 95 ".

Page 247, Last footnote is *f.*

Appendix B

Page B-5, Table III, column 1955, 3rd qtr., Raw materials, United States—*For* ". ." *read* " *112* "; and Manufactures, United States—*for* ". ." *read* " 121 ".

Page B-35, Table XXX, Staple fibre and rayon—*Delete* figures for 1940, 1950 and 1955 Plan ; 1955 Actual, *for* " 110 " *read* " 101 ".

Page B-39, Table XXXIV, Bicycles, 1956 Plan—*For* " 2.82 " *read* " 282 "; Woollen fabrics and Leather footwear—*Insert* " * " after " 27.6 " and " 13.4 ".

REVISIONS AND ADDITIONS TO TABLES

Since the publication of the SURVEY, additional statistics have become available on the Soviet Union and eastern Europe, mainly by direct communications from the governments concerned. It has thus been possible to revise and complete some of the tables published in the SURVEY: most of the changes are of relatively minor magnitude, but in the interests of precision the revisions and addenda (available up to early May) are listed below.

TABLE 80

Indicators of industrial activity in eastern Europe

	1953 Actual	1954 Actual	1955 Actual
Bulgaria			
Producer goods	+18	+17	
Consumer goods	+10		
Czechoslovakia			
Producer goods			+8
Consumer goods			+13

TABLE 81

Output of basic commodities in eastern Europe, 1953-1955

	1954	1955
Coal and lignite		
Czechoslovakia	+9½	+6
Total	+5	+6
Total in million tons	205	

TABLE 82

Harvest results in eastern Europe

	1954	1955
Bulgaria		
Bread grain	1.9	2.3
Coarse grain	1.5	2.3

TEXT TABLE ON PAGE 180

Trade turnover (exports plus imports) of the Soviet Union and some countries of eastern Europe 1952-1955

	Total trade
Soviet Union 1955	120

FIRST TEXT TABLE ON PAGE 185

Index numbers of national income, investment and consumption

	1955	*1956 Plan*
Hungary		
National income	108	105

SECOND TEXT TABLE ON PAGE 185

Planned investment in some sectors in 1956

Czechoslovakia	
Engineering	..
Mining	111

TABLE 89

Agricultural production in eastern Europe

	1953	*1954*
Bulgaria		
Total	114	87

TEXT TABLE ON PAGE 191

Gross output of industry in Rumania

	1960 Plan
Total	160-165

TABLE 95

Annual rates of growth of output of the producer- and consumer-goods industries in the Soviet Union

Year	Gross output of consumer goods
At 1952 prices	
1951	15
1952	10

TABLE 97

Surplus of state enterprises in the Soviet Union

	Transfers of profits to budget	
Year	Out of current profits	Excess working capital
1956 Plan	101.0	6.4

TABLE 101

Government receipts from profits of state enterprises, direct taxation and borrowing in eastern Europe

Country and year	Total (Billions of national currency at current prices)	Percentage distribution			
		Turnover tax	Profits	Direct taxes	Borrowing from the public
Bulgaria					
1950	156				
1951		64	23	17	
1952	12.0 [b]	69	20		
1953				9	3
1954		74	15		

TABLE 104

Distribution of planned investment in the Soviet Union and eastern Europe, 1949 to 1955

Country and period	Industry	Agriculture	Other [a]
Bulgaria 1949-1953	40.1	17.6	18.1

TABLE 105

Average annual rates of growth of national income and gross fixed investment during the long-term plans ended 1953 to 1955

Bulgaria 1949-1952:	Second column	23
	Last column	107 [d]

CHART 13

Planned and actual national income and fixed investment in the Soviet Union and eastern Europe

For caveat on Rumanian data see footnote 31 on p. 24 of the present *Bulletin.*

TABLE 110

Annual rates of growth of gross industrial production in eastern Europe

	1950	1951	1952	1953	1954
Bulgaria — Producer goods	18	17	14	18	17
Consumer goods	20	21	9	10	

TEXT TABLE ON PAGE 232

Completed investment projects as a percentage of gross fixed investment in Hungary, Rumania and Bulgaria

The data for Bulgaria exclude investment by co-operative farms. Figures inclusive of this investment are as follows:

1950	1951	1952	1953	1954
76	112	77	62	86

TABLE 112

Five- or six-year totals of planned and actual gross fixed investment in eastern Europe

Actual investment in Bulgaria should read as follows:

Heavy industry	175
All industry	200
Other	30 [l]

TABLE 113

Index numbers of planned and actual changes of national income and gross production during the long-term plans

	Bulgaria	
	1953	1952
National income at plan prices	186	
Value at plan prices of gross output of:		
Agriculture		110

The title of the table should read as indicated above.

TABLE 114

National income and fixed investment in Albania

At 1947 prices	1955
National income [a]	15.6

TABLE 115

National income and fixed investment in Bulgaria

At 1939 prices	1950	1951	1953
National income [a b]		80.0	92.9
At current prices			
Gross fixed investment	88		

TABLE XXVI

Expansion of producer-goods output in the Soviet Fifth and Sixth Five-year Plans

	Fifth Five-year Plan 1951-1955		Fifth Five-year Plan 1951-1955
Gas	68	Heavy forging and pressing equipment . .	460
Peat	42	Instruments	200
Shale	130	Motor vehicles	23
Refined copper	53	Ships and tankers	190
Aluminium	180	Fishing boats and tenders	160
Lead	130	Tractor cultivators	*g*
Zinc	100	Agricultural machinery	100
Nickel	37	Calcined soda	92
Metallurgical equipment	55	Synthetic rubber	68
Rolling-mill equipment	64	Marketable timber	28
Chemical equipment	160	Paper	56
Steam and gas turbines	70	Cement	120
Hydraulic turbines	370	Slate	170
Generators	380	Bricks	110

TABLE XXVII

Expansion of consumer-goods output in the Soviet Fifth and Sixth Five-year Plans

	Fifth Five-year Plan		Fifth Five-year Plan
Rayon	290	Furniture	150
Sewing machines	220	Meat	69
Motor-cycles	100	Butter	40

TABLE XXIX

Gross industrial output by Republics of the Soviet Union

	1954	1955
Byelorussia		2
Uzbekistan	1.5	1.62
Moldavia		2.7

TABLE XXX

Soviet industrial production in the Fifth and Sixth Five-year Plans

	1940 Actual	1950 Actual	1954 Actual	1955 Plan	1955 Actual
Peat		35	47	*45*	50
Generators		0.9			
Metallurgical equipment		111			
Motor vehicles		362			
Motor-cycles		122		*(225)*	
All agricultural machinery		3.0	5.8		
Tractors				*130*	
Caustic soda			498		563
Calcined soda					1 437
Substitute upper leather	..	..	..	31.5	51.6
Artificial leather	..	..	..	0.5	10
Furniture		2.8			
Window glass		75			
Bricks	6	10	18	*22*	20
Meat [n]		1.4	2.2	*2.6*	2.3
Butter		311		*534*	

TABLE XXXII

Industrial production in Czechoslovakia

	1954	1954	1955	1956
	Physical units Actual	Index numbers—Previous year = 100		
		Actual	Actual	Plan
Hard coal	21.6	106.4	107.4	
Brown coal (including lignite)		112.5		
Iron ore			114.0	
Rayon				..
Piston compressors			125	

TABLE XXXV

Industrial production in Poland

The corrections to this table are in no case more than minor ones: see data given as Table A, *Monthly Bulletin of Statistics*, United Nations, New York, May 1956.